MODERN PACKAGING



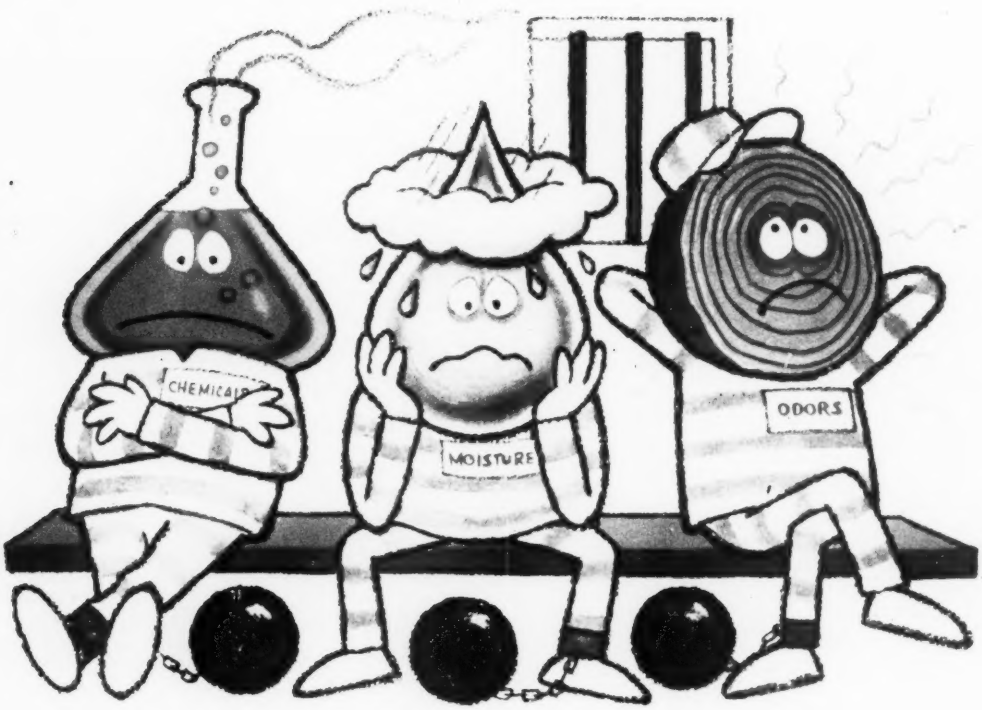
GREAT PACKAGING DISCOVERIES: *The volatile corrosion inhibitors*



NOVEMBER 1960 | *Background* / *Sounding Board* / *World Report* / *Ideas in Action*

Special report on the recurring Food Additives crisis | **COMPLETE CONTENTS, pp. 2-3**

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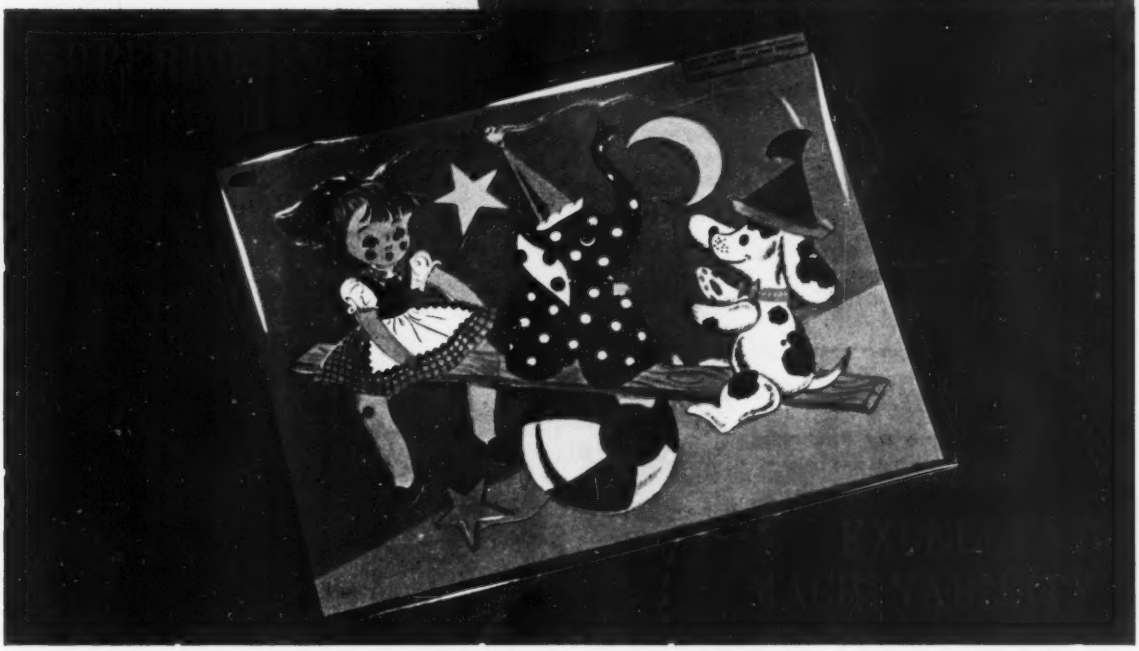
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Lots of good things come from

GOODYEAR

Vitafilm, a Polyvinyl chloride – T. M. The Goodyear Tire & Rubber Company, Akron, Ohio

IN THIS ISSUE

93 **Convenience is king**
The most important word in packaging today is *convenience*. It is a concept sweeping far beyond the food field, reaching into every product category. With brand rivalries so close, it may be the one factor that determines success or failure. But success is dependent on convenience packaging with real value for the consumer. Here is a comprehensive and thought-provoking report on a trend of the most vital importance to packagers everywhere.
General interest.

100 **New function in corrugated**
A protective industrial package can be handsome, re-usable and cost cutting. Kent-Moore proves the point with a "cavity-pack" box for automotive-service tool sets that doubles as a permanent storage chest. The cavity pack is a series of die-cut and glued corrugated sheets that form a block with nests for each tool. Besides its customer value, the new package cuts labor, material and inventory costs.
Special interest: tools, machinery, appliances.

103 **Gift combos in stretch film**
Packagers looking for a simple and practical way to achieve neatly tailored transparent wraps on gift or deal combinations of any kind might find a solution in Max Factor's use of stretchable vinyl for two fall gift sets. The tough plasticized film, in 1-mil thickness, is drawn manually around the items to be packaged. Its smooth, snug fit and sparkling clarity provide the products with new display appeal.
Special interest: foods, cosmetics, toiletries.

104 **Roll-fed cigarette cups**
Now in operation at R. J. Reynolds' plant is a roll-feed label attachment for soft-pack cigarette-packaging machines that forms the outer cup from a continuous web rather than from cut sheets. It marks a significant step toward the objective of combining all elements of the traditional package in a single wrap. And it may lead to the simplification of packaging-machinery operations in other fields that now use multi-step wrapping procedures.
A production-methods article.

105 **Line for a giant carton**
Automation catches up with the trend to giant-size cartons for consumer products, which until now had required a costly hand-packaging operation. Using a new set-up and closing machine for 20-lb. cartons of All detergent, Lever Bros. trims labor 50% and increases production 300%. The integrated, open-top machine is coupled with a rotary filler for non-stop handling at 40 packages per minute.
A production-methods article.

110 **Mechanizing a complex plastic package**



Significant progress in high-speed assembly, filling and closing of multi-part molded packages is demonstrated in a new automatic line for the Mennen Co.'s screw-feed stick-deodorant containers. At a 57% saving in labor and a 40% rise in output, the continuous-motion rotary line puts together a four-component polystyrene-and-polyethylene package for Speed Stick and Date Line deodorants at a production rate of 150 units per minute. The line introduces new precision automation which

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"The challenge of the times."

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OF MODERN PACKAGING®

may become more common as intricate molded-plastic containers move into volume use.
A production-methods article.

116 **The volatile corrosion inhibitors**
A *Great Packaging Discovery*. VCI compounds, the "magic" chemicals that give off an invisible vapor to prevent rust of ferrous-metal products, today afford long-term in-package protection to items ranging from tiny hairsprings to large engine components. And their packaging potential has barely been tapped. Yet the discovery of VCI was an almost accidental by-product of research at Shell Development's laboratories.
General interest.

120 **Food Additives: full stop ahead**
With just four months left before the March 6 deadline for compliance with the Food Additives Amendment, F&DA reports that 1,027 packaging items have yet to be cleared as non-additives. But there's hope that not one important food-packaging material will miss the boat. The principles of omnibus petition, clearance by specification and prior sanction offer means for simplified mass clearance. And F&DA may go to Congress for "hardship" extensions.
Special interest: foods, drugs, all material suppliers.

123 **Designed for the times**
The requirements and limitations imposed by television advertising persuade a British grocers' alliance to strive for simplicity and legibility in a family-design program for a broad range of food-store products.
General interest.

124 **Twin-sleeve multipack**
Any consumer-goods producer contemplating a complete structural overhaul of its package should consider the needs of the dealer as well as the customer. Such is the philosophy employed by Johnson & Johnson in the development of a break-apart, two-tray package for cotton swabs. Occupying 36% less retail shelf space than its predecessor, it offers consumers new product protection and greater convenience in use.
Special interest: foods, drugs, toiletries.

TECHNICAL & ENGINEERING

131 **Copolymer-film shipping bags**
In a development that may foreshadow a major advance in the use of all-polyethylene bags for bulk shipment, Phillips Chemical introduces a modified ethylene copolymer so tough that tubular film bags of 5- to 7-mil wall thickness are reported to perform better than low-density bags with 10-mil walls. Competitive in cost, the material's properties also include low WVTR, greaseproofness, stackability and handling ease. *By R. J. Martinovich and Robert Doyle.*

136 **Requirements of frozen foods**
Here is a thoroughgoing review (including an extensive bibliography) of the effects of packaging materials on product palatability. Conclusions are that there is now available no single all-purpose material for packaging all types of frozen foods and that the rapid development of new materials demands a better understanding of their protective qualities.
By J. D. Winter and Shirley R. Trantanella.

140 **Questions & Answers**
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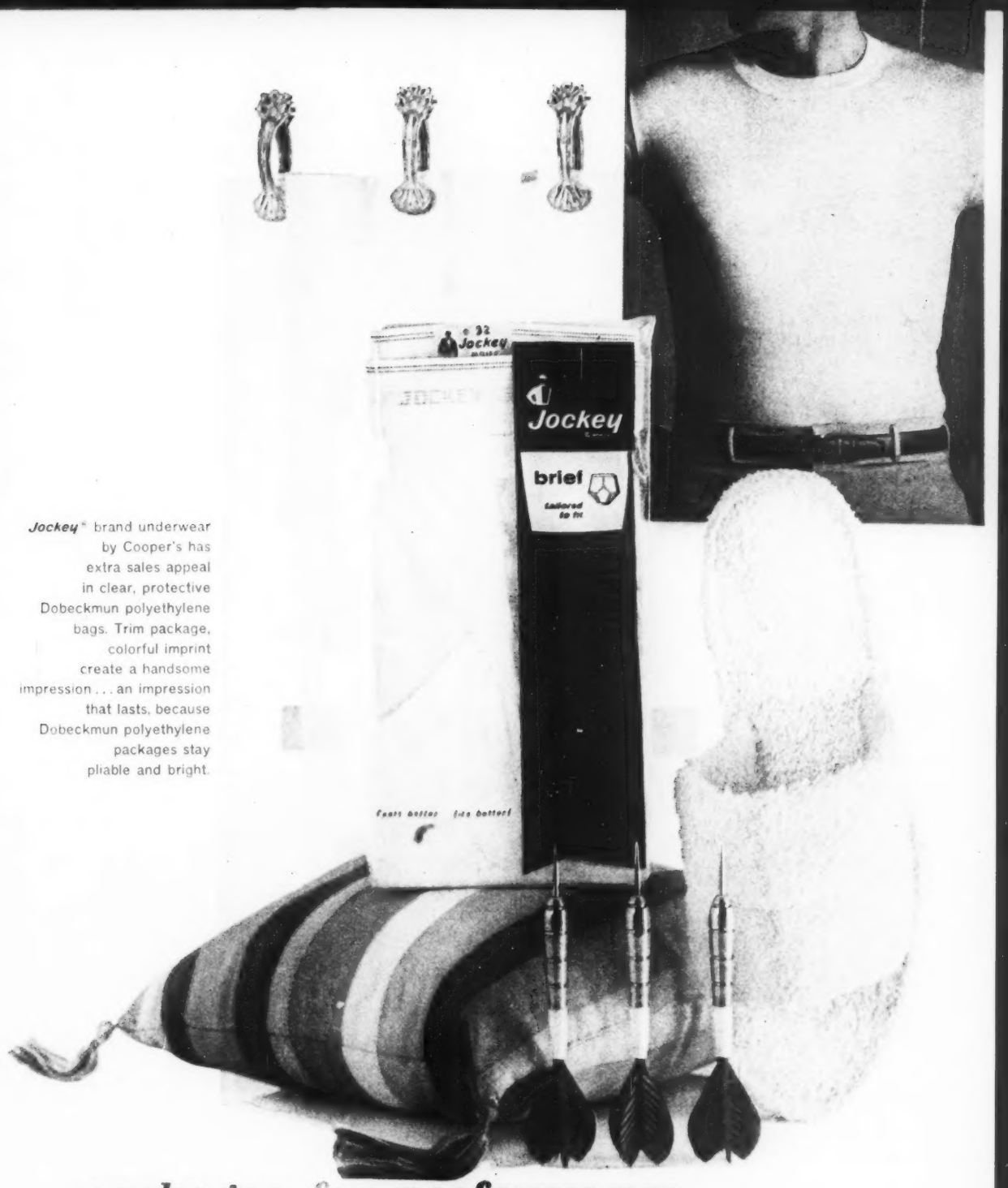
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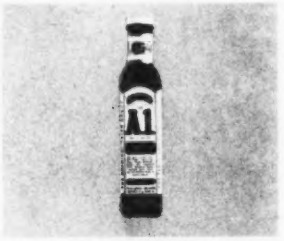
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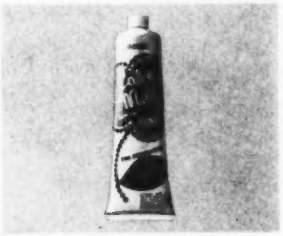




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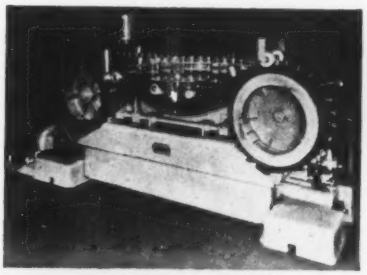
Kraft Food's Miracle Whip and Miracle French Dressing are as well known and as widely used by American housewives as their favorite brand of cosmetics. In the business world Kraft, a division of National Dairy Products Corp., enjoys a reputation as one of the nation's most able producers and merchandisers of food products.

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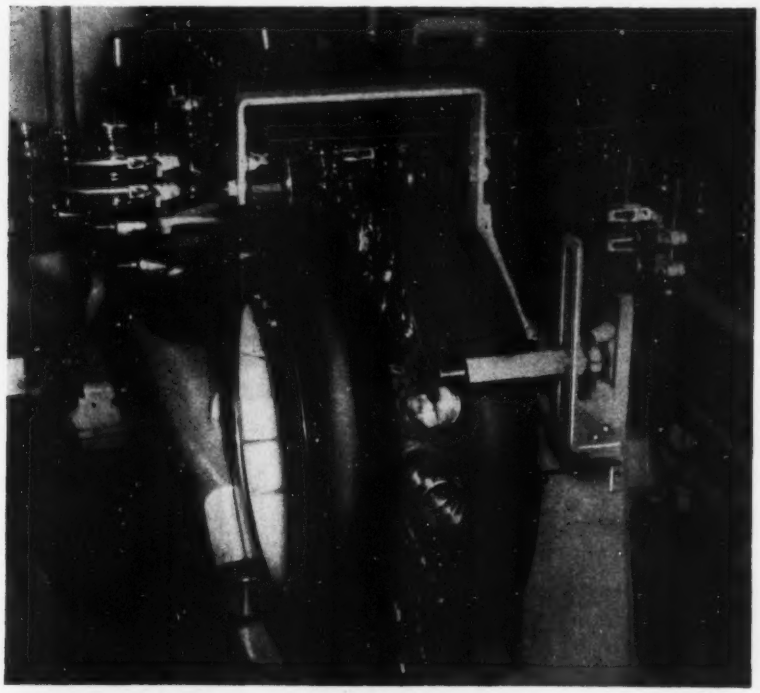
KRAFT, a long time advocate of Pneumatic "lower cost per container" operation also uses Pneumatic equipment for filling, capping and, to considerable extent, labeling these containers.

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- "Sausage" type Neoprene tubes do trick
- Kraft among first to convert







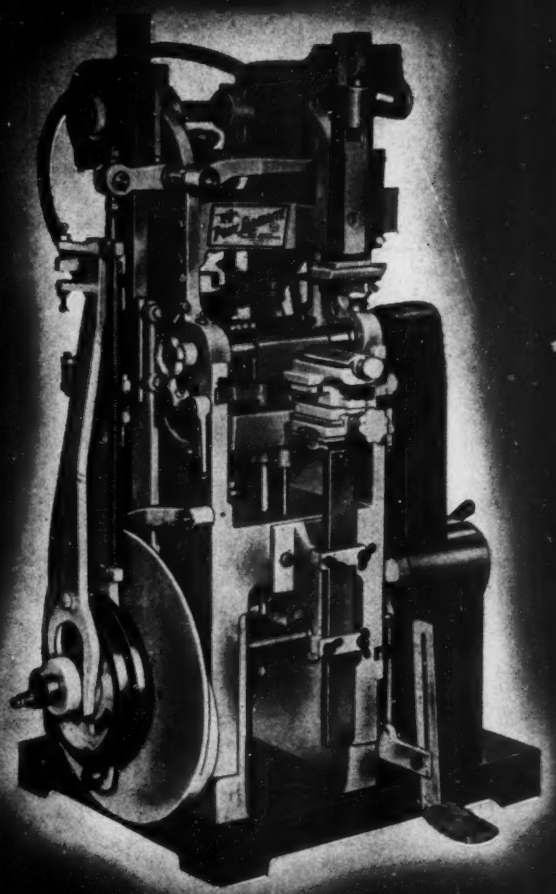
KRAFT runs both its wide mouth salad dressing jars as well as its narrow neck containers for a variety of sauces and dressings through its Pneumaclean units with equal facility.

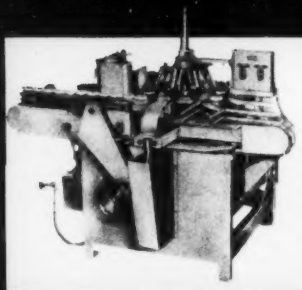
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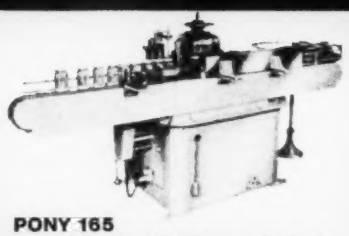
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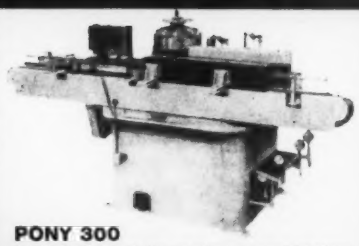




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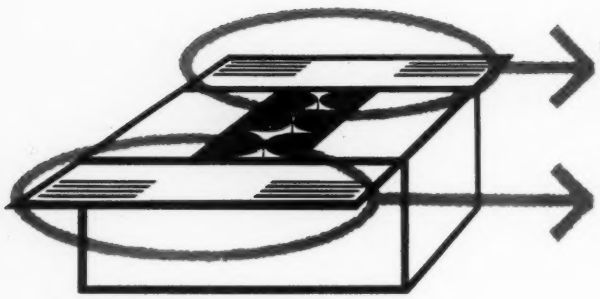


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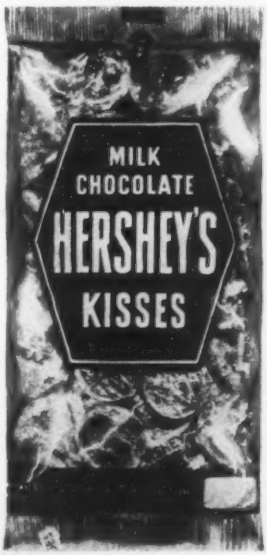
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Airtight aluminum packages... pioneered by Ekco-Alcoa

This is new Smoothfoil, created by Ekco-Alcoa. It is a unique find for the packaging innovator who wishes to score a marketing first. Smoothfoil's entrancing beauty is difficult to resist. Its airtight hermetic seal lets you shelf and keep moisture-sensitive products with complete safety . . . jellies, jams, coffee, sugar, ball bearings, pharmaceuticals, electronic parts . . . the list is endless.

Smoothfoil typifies Ekco-Alcoa's ability to produce the new and unusual. We take your packaging problem—design, test—and transform it into a bold, exciting aluminum package that fits your exact needs. Few shapes, sizes and colors are beyond our reach. And we mass-produce to keep unit cost surprisingly low.

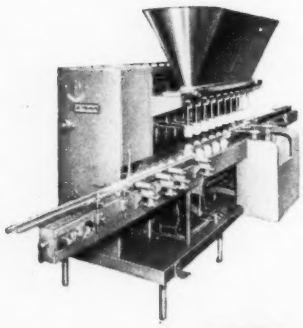
The result is a package—like Smoothfoil—that is undeniably new, undeniably your own. Consult us for particulars.

EKCO-ALCOA CONTAINERS INC.

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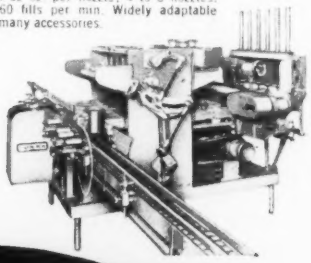
EKCO is the registered trademark of Ekco Products Company. ALCOA is the registered trademark of Aluminum Company of America. The corporate name and symbol/mark share, EKCO-ALCOA, is also under license to the manufacturer in each of these companies.



No. 19A Colton-Hope High-Speed Automatic. Fills liquids, creams, pastes into bottles, jars, cans. ¼ oz. to 32 oz. per nozzle; 4 to 14 nozzles. Up to 250 fills per min. Many accessories available.

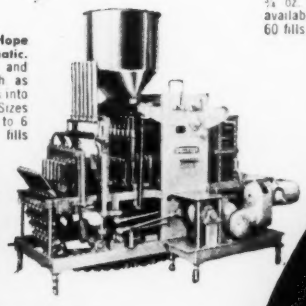


No. 19 Colton-Hope High-Speed Automatic. Fills liquids, creams, pastes into bottles, cans, jars. Excellent for filling, top-finishing, disc-placing in cosmetic cream work. ¼ oz. to 32 oz. per nozzle; 4 to 8 nozzles. Up to 160 fills per min. Widely adaptable through many accessories.

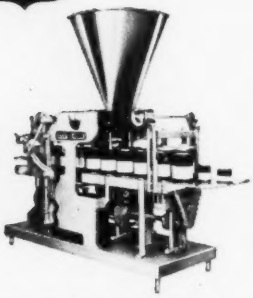


No. 15RF2 Colton-Hope Two-Line High-Speed Automatic. Fills liquids, creams, pastes into glass, plastic, tin, paper containers. ¼ oz. to 32 oz. per nozzle; 1 or 2 nozzles available. Many outstanding features. Up to 60 fills per min. Many accessories available.

No. 27 Colton-Hope Heavy-Duty Automatic. Fills high viscosity and ropy materials such as caulking and greases into tubes or cartridges. Sizes up to 2" x 10"; 2 to 6 nozzles. Up to 90 fills per min.



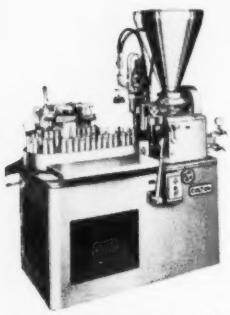
PACKAGING MACHINERY MANUFACTURERS INSTITUTE PMMI



No. 21 Colton-Hope Single and Twin Automatic Conveyorized Heavy-Duty Filling Machine. For filling liquids, creams, light and heavy pastes such as paints and similar products into jars and cans. Production up to 10 cycles per minute per nozzle. Fills up to 1 gallon per nozzle. 1 and 2 nozzles available. Paint can lid dropping and pressing features available.

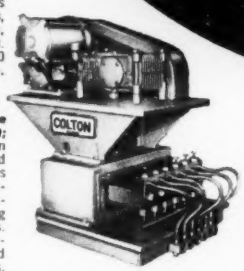
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These basic fillers typify the wide range of filling covered by the Colton line—most complete and versatile in the world. Such basic machines, readily adaptable to individual application by means of accessories engineered to the machine, give, in effect, a custom-engineered machine at standard machine price. It is this adaptability that enables us to say "Colton fills practically ANYTHING into ANYTHING." Many other Colton fillers available. Write for Filling Machine Application Data Sheet. Detailed specification sheets available. Arthur Colton Company, 3400 E. Lafayette Ave., Detroit 7, Michigan. Sales and Service offices throughout the country. Plants: Detroit, Mancelona, Elk Rapids, Michigan.



No. 175 Colton Automatic Tube Filler, Closer and Crimper with Ejector.* Fills liquids, creams, pastes into tubes, small bottles, jars, cans. Cleans, fills, folds, crimps, ejects. Various fillers offer 30 to 300 tubes per min. per machine.

***No. 176 Plastic Tube Sealing Attachment;** low cost conversion unit to replace standard folding heads on Models 17TF and 175TF machines. Gives dual-purpose machine handling metal or plastic tubes. Model 172 Colton exclusively for high speed sealing of plastic tubes.



Series 100 Colton High-Speed Multiple Liquid Fillers, (for bench or conveyor belt use). Fills liquids into jars, bottles, cans. Up to 4 fl. oz. per nozzle; 4 to 12 nozzles. Up to 480 fills per min. Can be manifolded for larger fills. Extreme accuracy, high production in a low-cost machine.



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FOR EVERY FILLING NEED

COLTON fills practically ANYTHING into ANYTHING





USE NIBROC® PRINT-PAK PACKAGING PAPER FOR FASTER PRESS RUNS

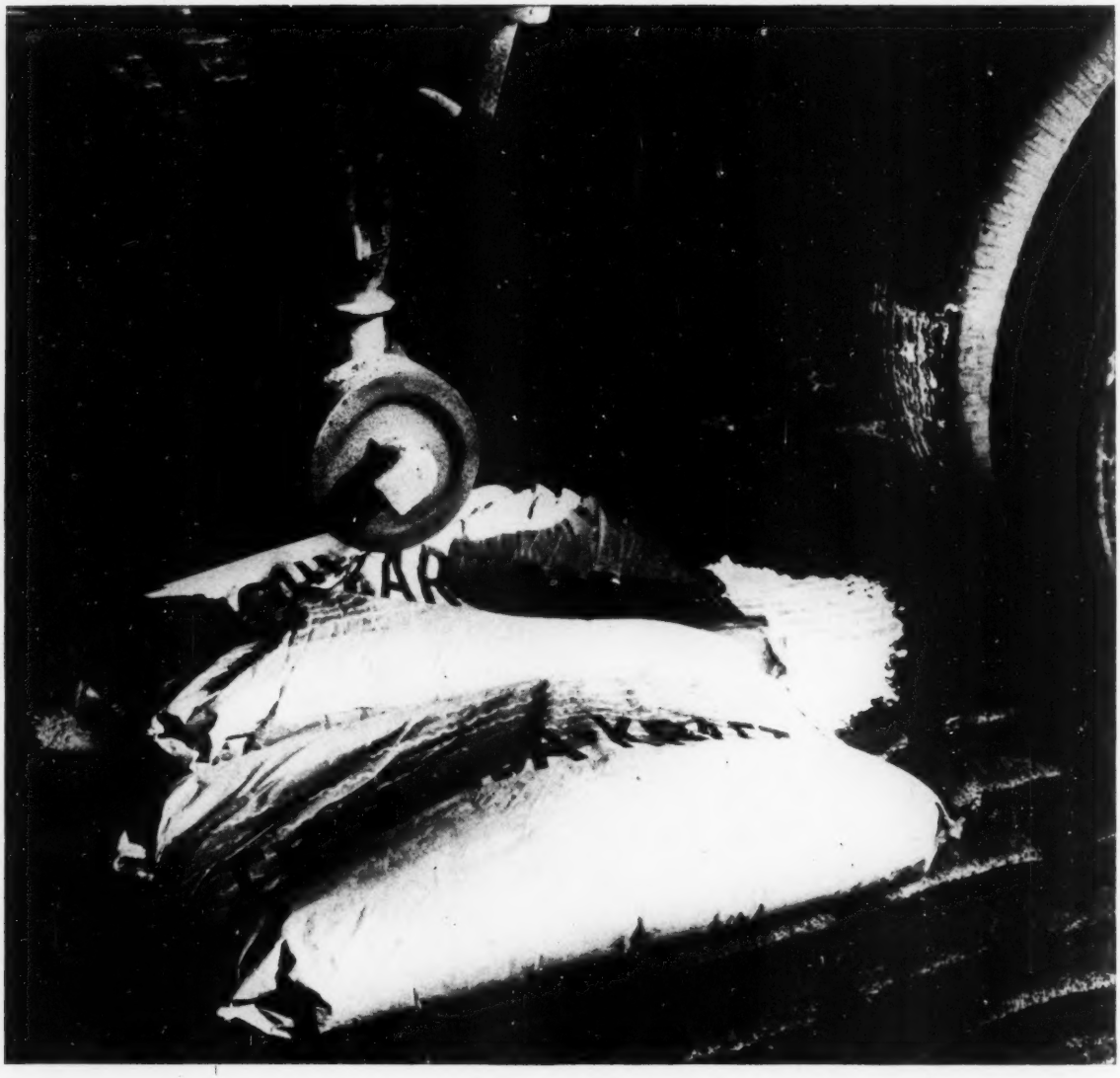
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One bag broke . . . the other has two-way stretch

The one with stretch is made of H&W's new, high-strength Expanda Kraft.®

A large tractor-trailer ran over both bags of equal weight and plies. The regular kraft bag burst under pressure—see the tell-tale flour on the inside tire tread. But look at Expanda Kraft —*not a sign of breakage!*

Expanda Kraft is stronger, because it's made by a special roll-crepe process. It's resilient, has two-way stretch, and soaks up shock. And Expanda Kraft is available in white, semi-bleached and natural.

Expanda Kraft comes in 40, 50, 60, 70, 80 and 100-pound basis weights. *For samples and information*, write Hollingsworth & Whitney, Division of Scott Paper Company, Chester, Pa.

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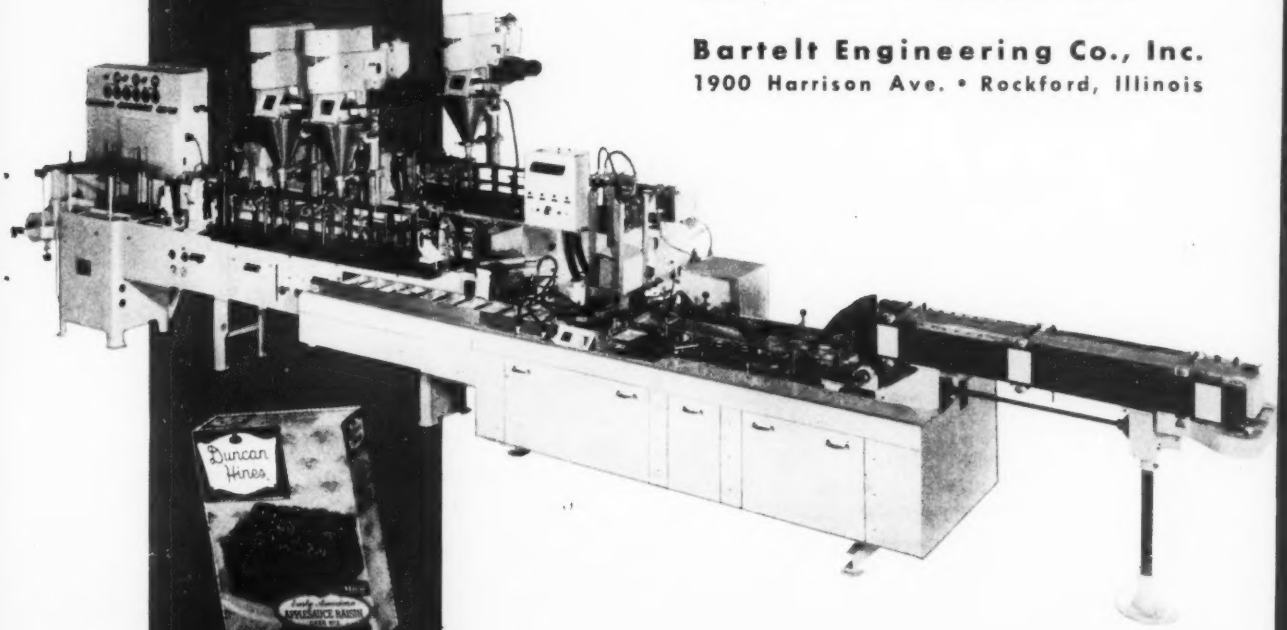
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For the packaging of their Duncan Hines line of prepared mix products . . . Procter & Gamble uses Bartelt Automatic Packaging Machinery.

Where package production must yield consistent quality . . . where package standards must build solid consumer acceptance . . . where specialized needs demand creative engineering, Bartelt know-how is at work. Bartelt machinery is providing distinctly superior packaging for the finest of products . . . where unfailing quality counts.



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Fibreboard Again Solves Industry Need–With New Fibrematic® Container. The nation's leading frozen food companies are now packaging frozen strawberries in Fibrematic. With its built-in plastic-coated liner, Fibrematic: provides better protection at lower cost; fills easier and faster*; *opens quickly without any utensils.* And future product applications for liquid-tight Fibrematic are virtually unlimited!

Fibrematic exemplifies Fibreboard's ability to serve you. Fibreboard is the only major carton and container manufacturer in the U. S. whose entire marketing effort . . . scientist to salesman . . . is organized to meet the marketing problems in your specific industry. And for actual package production, Fibreboard's facilities are the largest, most modern in the whole wide West!

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Fibreboard also serves the West with its complete line of building and decorating materials . . . marketed under the Pabco banner since 1884.



MARLEX* approved by all major detergent suppliers

The inherent advantages of lightweight, attractive, and unbreakable plastic containers are unquestioned—more sales appeal, less costly to ship, no breakage, to name a few. Equally unquestioned are the reasons why MARLEX high density blow-molding resins are widely approved for modern detergent containers.

MARLEX blow-molding grades cost no more! Yet, they provide high stress cracking resistance, great rigidity and strength per mil of wall thickness . . . as well as easy processing at high production rates—in short, superb and economical plastic containers.

Today, countless marketers of liquids—starches, bleaches, waxes, shampoos, cough syrups, and the like—are switching to containers made of MARLEX. Our engineers have pioneered the use of high density polyethylene and ethylene copolymers for blow-molded containers. The accumulated knowledge and experience of their work is available to those interested.

**MARLEX is a trademark for Phillips family of olefin polymers.*

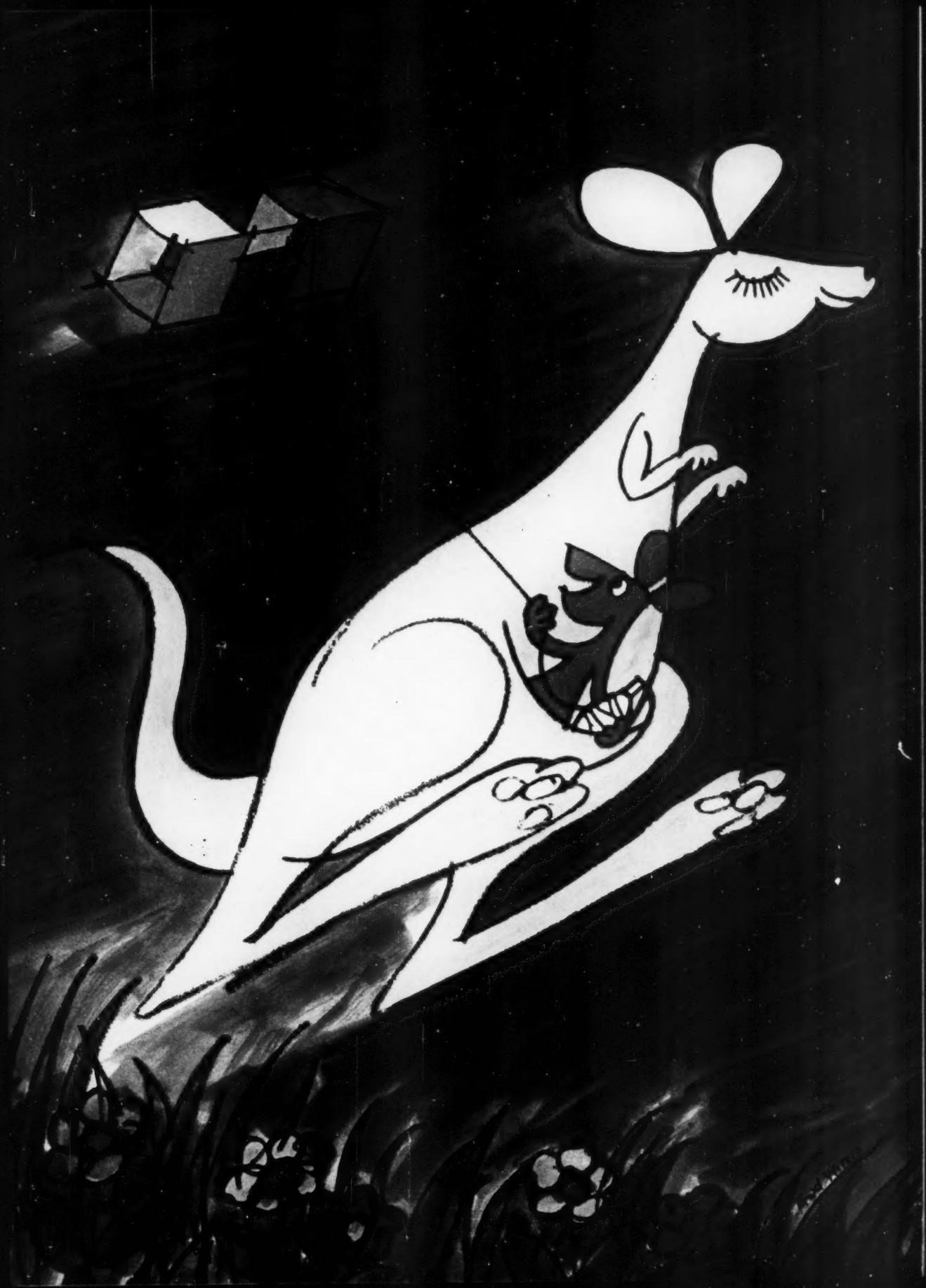
PHILLIPS CHEMICAL COMPANY, Bartlesville, Oklahoma, a subsidiary of Phillips Petroleum Company

PLASTICS DIVISION OFFICES

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PHILLIPS 66 MARLEX



The Perfect Container doesn't Just Happen!

You can't blame Baby Kangaroo for being hopped up about his mother's container. Crib, carriage and nursery all in one, the Kangaroo's pouch is certainly a container that does what it is supposed to do . . . best!



In the dynamic aerosol industry Canco containers do what they are supposed to do . . . best! Today, Canco offers aerosol packers broad technical experience and a complete selection of metal containers. You can be sure that the great pressure containers to come will come from Canco.

To increase your sales and profits, put Canco's aggressive team of research, manufacturing and marketing experts to work on your aerosol packaging problems.

GREAT CONTAINER IDEAS COME FROM CANCO

CANCO DIVISION
AMERICAN CAN COMPANY



Supermarket Simulator
located in Port of New York Authority
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...IN YOUR PACKAGE

Our Supermarket Simulator with our selected consumer panels will tell how much "sell" is in your package... and also how to put more in it. Our measurements are meaningful because our tests are conducted under actual store conditions, with the package in competition with other brands and products.

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Why not let us measure the "sell" in your package... and help you increase it? Write or phone for full details. No obligation.

Send for your free copy
"Analyses in Visual Communication".

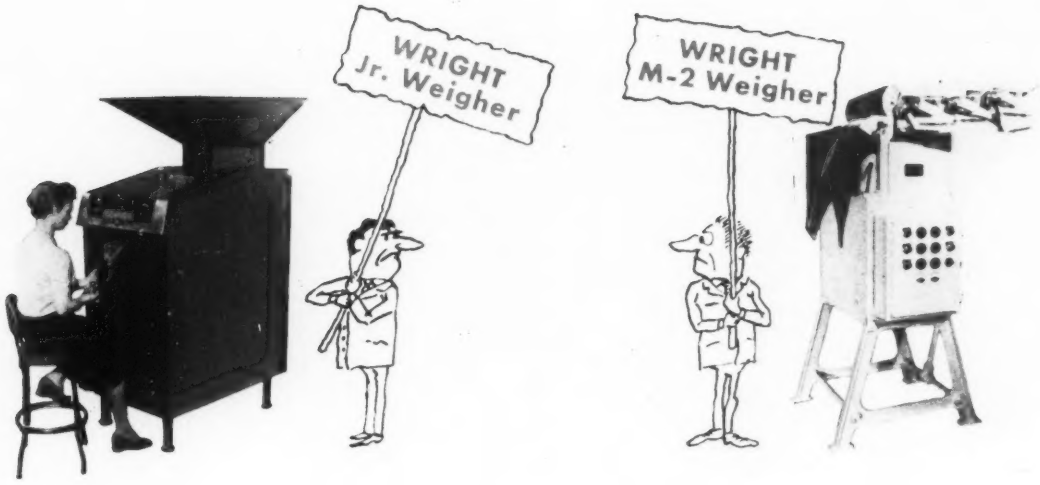


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18



Calm Down Gentlemen, You're Both Correct...

Both of these semi-automatic, net weighers do a superior job for packagers of candies, crackers, cookies, and similar dry, free-flowing products in bags, boxes, and cans. But they are not in competition with each other.

The Wright Junior Weigher is for firms packaging a variety of products and sizes. Change-overs can be made in minutes, weights are extremely accurate, and product handling is gentle. Even satin-finish candies are not scratched. Weight range is one-half to 16 ounces. Speed is up to 20 charges per minute. The cost of this machine is modest.

The Wright M Weigher is for high production lines handling long runs. Its three phase vibratory feed and weighing system (1) smooths the product flow, (2) bulk fills to within 85% of desired weight, and (3) dribble feeds to exact weight. Its range is one-half to 16 ounces. Speeds are up to 32 per minute on models with two weighing heads, and up to 48 per minute on models with three weighing heads. (The M is also available in fully automatic models for handling rigid containers.)

In summary, and no pun is intended, there is a Wright weigher for your particular requirement. A minute of your time spent filling in the coupon below will bring you complete information.

WRIGHT MACHINERY COMPANY
DIVISION OF SPERRY RAND CORPORATION
DURHAM, NORTH CAROLINA

WRIGHT MACHINERY COMPANY / **DIVISION OF SPERRY RAND**
DURHAM, NORTH CAROLINA

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QUALITY CONTROLLED LAMINATIONS



For Tough Packaging

With Excellent Machineability

1 . . . SKIN PACKAGING
100 Guage Acetate / 2 Mill Poly
AUTO-VAC Machine

2 . . . LIQUID PRODUCTS
300 Cellophane / 2½ Mill Poly
LYNCH-ROBO Machine

3 . . . PHARMACEUTICALS
50 Guage Mylar / Saran / 2 Mill Poly
POUCH

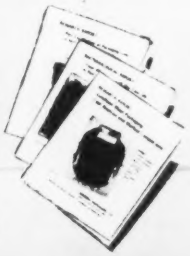
4 . . . FOOD PACKAGING
300 Cellophane / ½ Poly / 300 Cellophane
STOKES WRAP Machine

Modern Packaging offers top quality and service in developing new ways for you to insure, protect and display **your product**. With Modern Packaging's carefully controlled techniques your product is **visible**, yet protected by a tough, durable, easily handled, transparent film **designed to sell your product**.

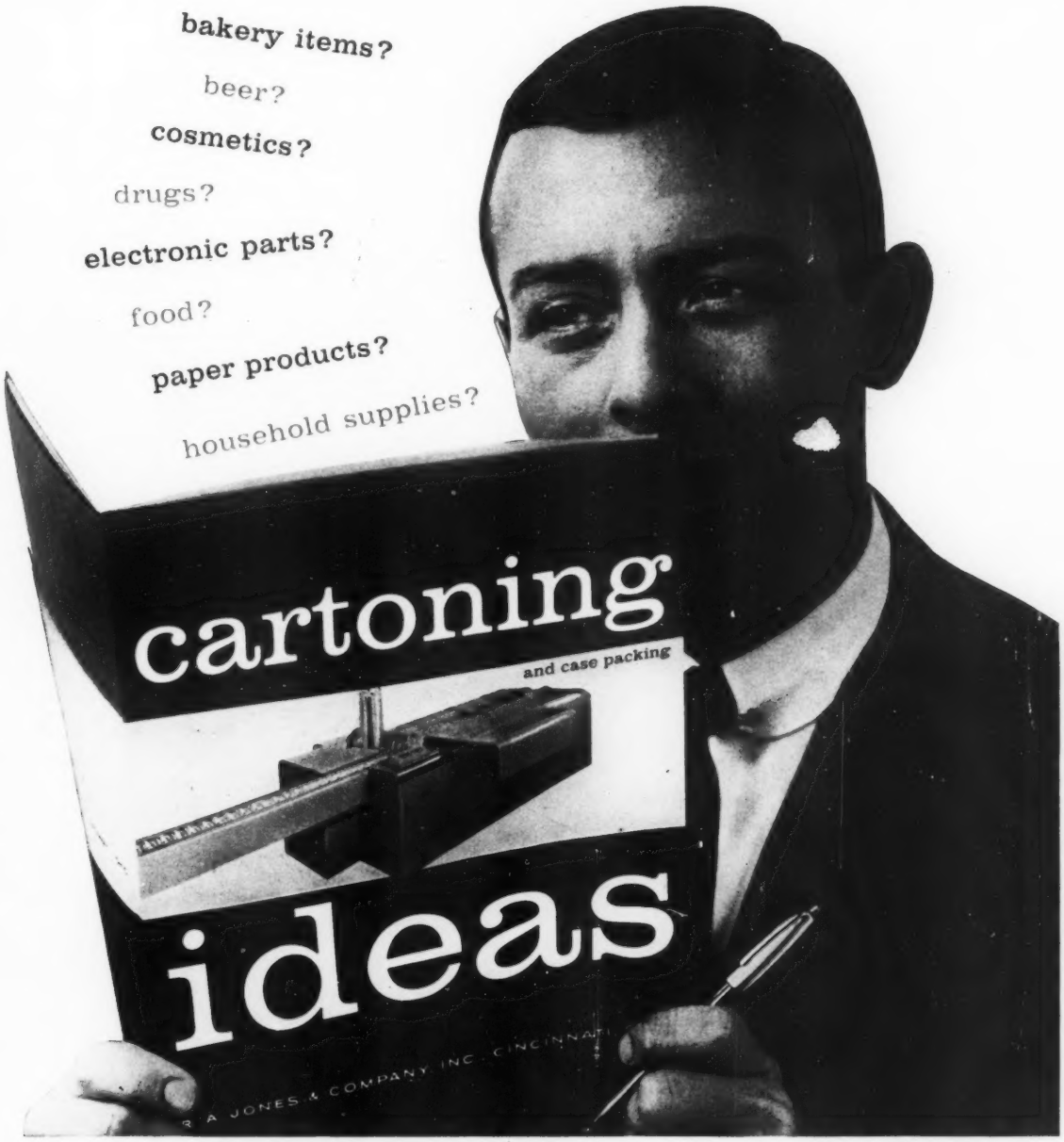
Shelf life is increased, customer acceptance goes up and spoilage costs go down.

Take advantage of Modern Packaging's experience, technical achievement and advanced quality control facilities. **Write today** for Modern Packaging's interesting and informative literature. It's designed to help select the process that's best for you!

MODERN *packaging company*



MOUNT HOLLY/NEW JERSEY



new cartoning ideas? check Jones!

free **CARTONING and Case Packing IDEAS:**

- *100 cartoning ideas*
- *20 pages, fully illustrated*
- *28 product categories from "automotive parts" to "tile"*
- *10 different semi- and fully-automatic models illustrated and described.*

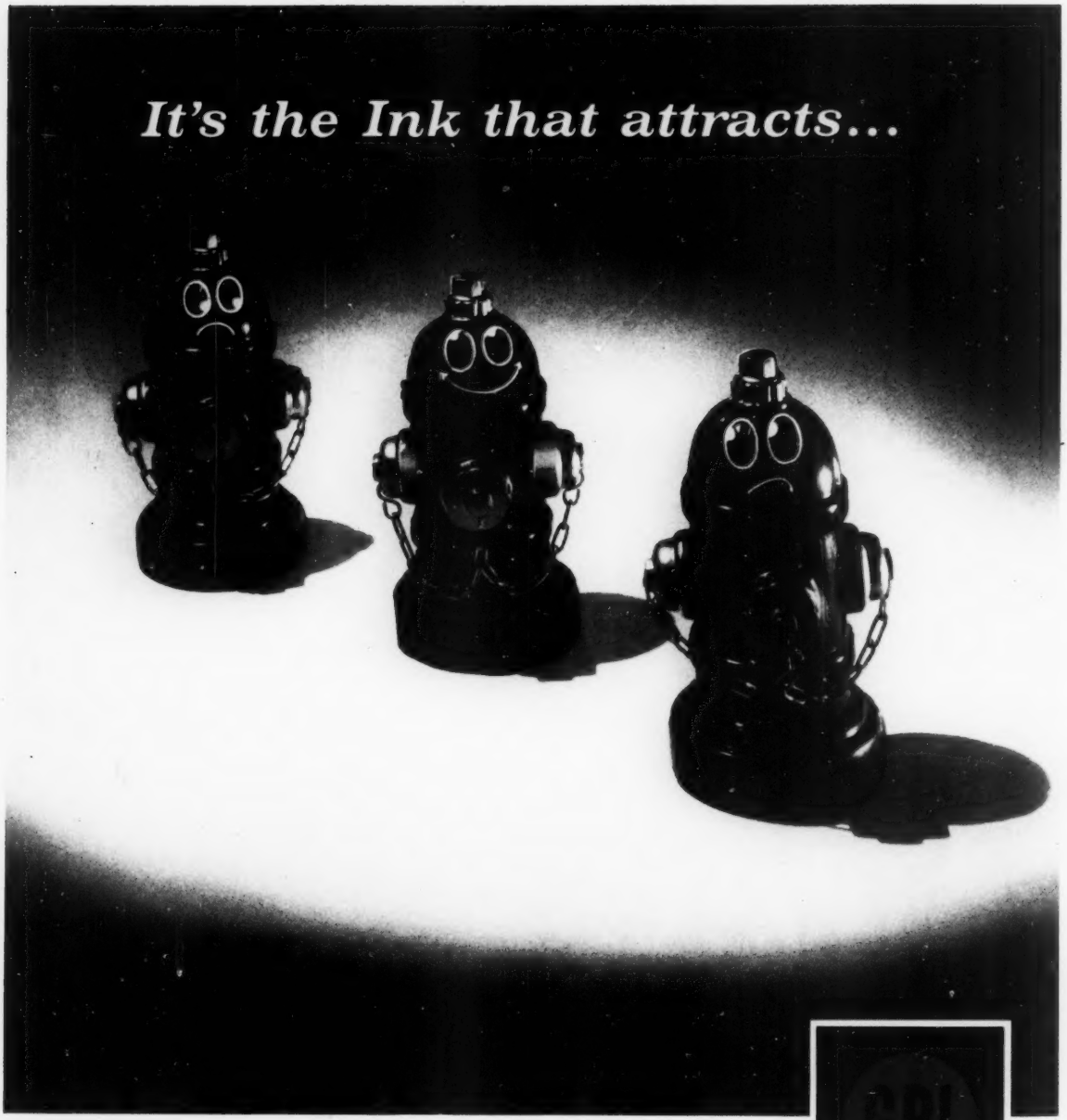
The colorful new 20-page CARTONING and Case Packing IDEAS brochure – just off the press – is already being warmly welcomed by the packaging industry. It's loaded with new ideas. Shows how new package designs help carry out various merchandising strategies, and how the products are cartoned economically on semi- and fully-automatic machinery.

This exciting new idea book can stimulate your thinking – perhaps help you with your current cartoning project? Write us on your letterhead for your free copy. R. A. Jones & Company, Inc., P. O. Box 485, Cincinnati 1, Ohio.

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• Branch offices: New York, Chicago, Atlanta, St. Louis, Los Angeles, San Francisco, Seattle, Dallas, Mexico, Montreal.

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PRINTING INKS can help *pump* up the sales of your product, package or promotion. That's why it's so important to use the *right* printing inks—right in color, right in quality, right in cost and right in *performance*. Inks that are outstanding, both on the press and on the end product. Let GPI help you to attract and *hold* customers. Simply call or write.

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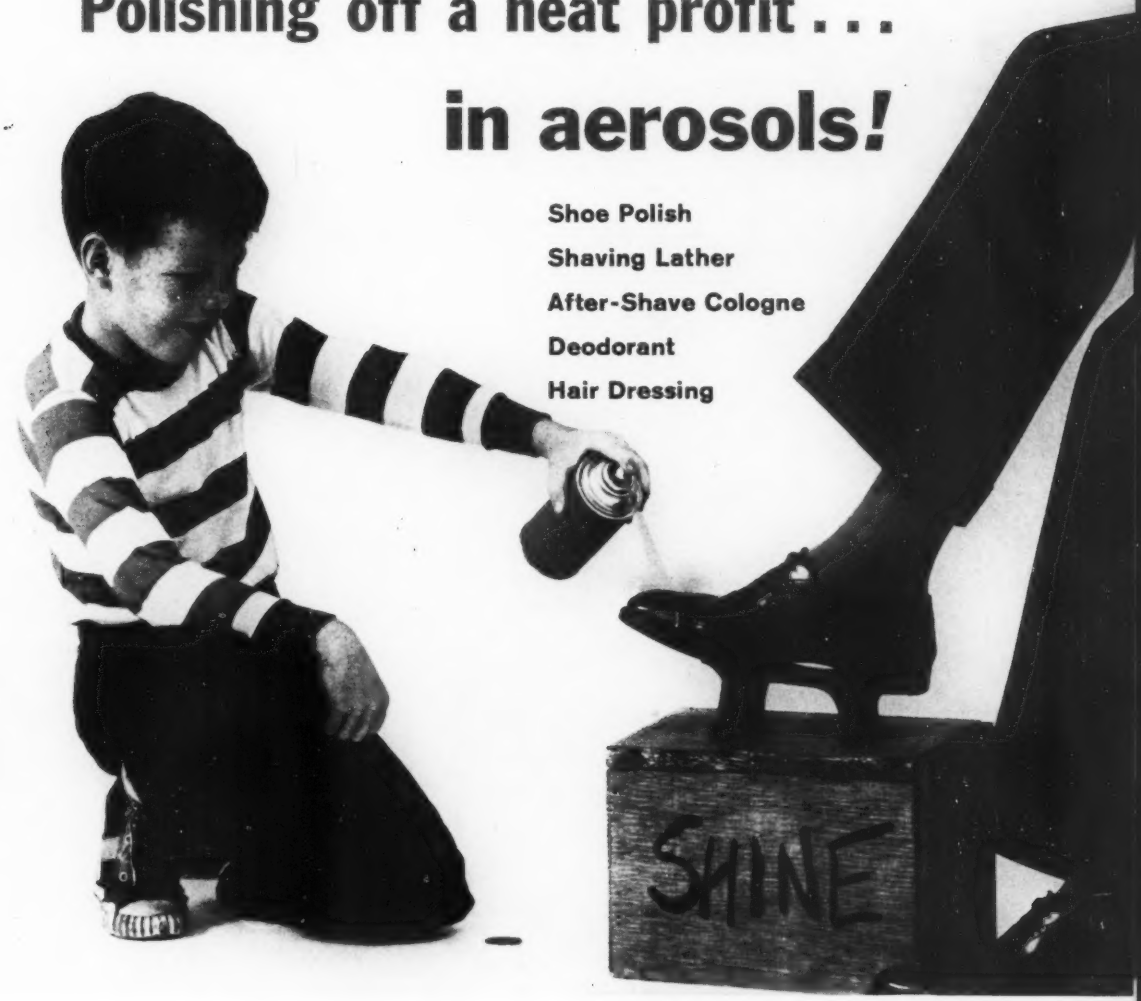
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in aerosols!



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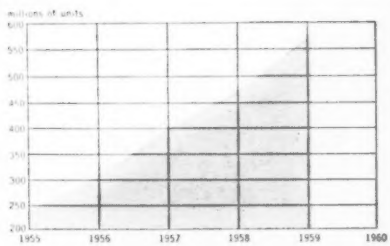
Hair Dressing

How the magic touch of aerosol packaging skyrockets sales!

Alert businessmen are turning to aerosol packaging for more sales and higher profit margins. For example, among grooming aids for men, aerosol shoe polish is a real "comer." Right now, it's receiving the kind of aggressive promotion that has made hair sprays and other aerosol products so successful.

If *your* product has "aerosol potential," now's the time to take advantage of General Chemical's many special services to help you enter the aerosol market. As a leading supplier of aerosol propellants, General can provide valuable technical data, latest market information and promising new aerosol formulations developed in its laboratories. In addition, General can help you select a contract filler who will take over the complete packaging job from preliminary tests to full-scale commercial production.

Don't wait to take advantage of these many helpful General Chemical services. Phone or write today . . . you may open the door to a whole new world of sales for your product.



Sales of aerosol products have grown 135%* in the last 5 years!

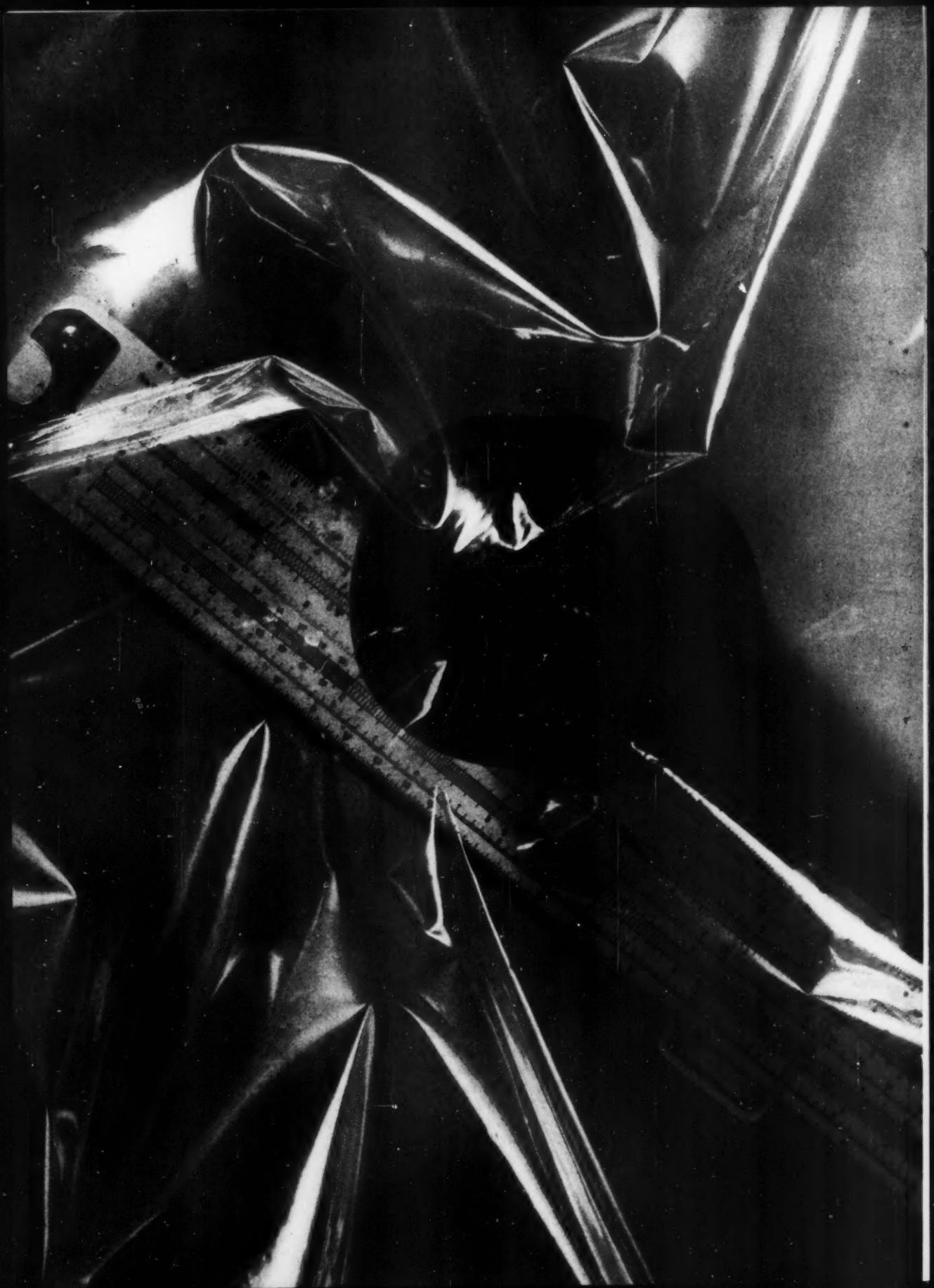
*Estimated by Market Surveys Department, General Chemical Division, Allied Chemical Corporation.

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GENERAL CHEMICAL DIVISION
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aerosol propellants

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Celanese Polyethylene Film has been developed to meet the demands of the packaging industry for a film with the qualities to stimulate new package applications and attract the growing number of new markets. It is as carefully engineered to modern packaging needs as skilled production methods and experienced research can make it.

Celanese Polyethylene Film is presented as a truly advanced product. It is obtainable in various types and forms specifically tailored to a variety of packaging applications. Among them is a film that exhibits an outstanding combination of clarity, gloss, toughness and machineability. This unique film is sure to give bag makers and convertors a strong advantage in competitive situations with other packaging films.

We invite you to discover for yourself the special merits of Celanese Polyethylene Film. Write us directly for samples and specifications. We would be interested in the packaging applications you have in mind. Celanese Plastics Company, 744 Broad Street, Newark 2, N. J.



Celanese PLASTIC PACKAGING

Celanese Plastics Company is a Division of Celanese Corporation of America.
Canadian Affiliate: Canadian Chemical Company Limited, Montreal, Toronto, Vancouver.
Export Sales: Amcel Co., Inc., and Pan Amcel Co., Inc., 180 Madison Ave., New York 16.

Look what's new in liquor packaging



WHY WE DIDN'T MAKE THE EAGLE. Armstrong engineered and produced this Old Hickory Golden Trophy bottle so that a handsome baroque eagle could perch on the top. It's a glittering gilded bird of heroic proportions, and we defy anyone to pass it by, which is exactly what the distiller had in mind. To be honest, we didn't make the eagle. We could have, but we felt that a highly specialized ornament maker could do it better. So we recommended one. Now he's making lots of eagles, we're making lots of Golden Trophy bottles, and everybody's happy.



Armstrong PACKAGING

1860-1960 *Beginning our second century of progress*

WATCH ARMSTRONG CIRCLE THEATRE EVERY OTHER WEDNESDAY EVENING ON CBS-TV

Background for Packaging

Competition gets hotter between aluminum and tinplate. No sooner had can makers announced a price cut of $2 a thousand on aluminum cans for the Florida citrus industry (a cut made possible by price adjustments on aluminum sheet delivered at Tampa), than U. S. Steel sprang the announcement of its new ultra-light "Ferrolite" tinplate, which weighs only about half as much as previous standard can material (MP, Oct., p. 60). While can makers are still proving out the new tinplate, it appears obvious that it will provide a can at a price much closer to that of a comparable aluminum can—and at close to the same tare weight. *Note*: When the aluminum industry raised prices recently on packaging foil, it held the line on sheet, strip and ingot for can making.

Can makers are happy about the new alignment of aluminum and tinplate prices, because it makes it possible to offer whatever their customers may want—and, because of the added know-how required, may head off any movement toward captive can making. Any combination is possible: all aluminum, all tinplate, or a combination using one material for the body and the other for ends. *But*: Still to be reckoned with is the fibre-foil body, aluminum-end can with its intriguing tear-open top, developed by Alcoa. Without the tear-off feature (the added cost of which, in full production, is still unknown), it might be the lowest cost of all.

The tear-open feature has implications for cans beyond the initial test use by Minute Maid for frozen citrus concentrate (MP, Sept., p. 238). For this product and others, the special foil-laminated fibre body appears suitable. Used with a metal body, the "no-opener" aluminum end, with its special welded tab and tear strip, has great possibilities for single-service canned foods and beverages—hot or cold—sold through vending machines. The tear-open strip removes the lid completely, with a single pull, and is said to leave a smooth, clean-edged lip, safe to drink from.

Ultralight tinplate, too, is aimed at big-volume canned products other than citrus concentrates. In general, can makers believe that the weight of 55 to 65 lbs. can be considered wherever 75- to 85-lb. material has previously served. This would exclude hot-processed foods—but would cover such big items as motor oil, coffee and dog food. But in any move to lightweight cans—whether aluminum or the new tinplate—can makers advise gradual steps with adequate pre-testing.

Are fluorescent inks establishing a trend in the cartoned detergent field? P & G's Tide, which started it, has been a stand-out on the shelves for some months. Now, Colgate-Palmolive's Ad appears in fluorescent-printed cartons. Reportedly, there is at least one other national detergent brand being test marketed in fluorescent cartons and two regional brands on the West Coast. A half-dozen other brands are watching the situation.

Distillers still argue over the proposal by Schenley group to permit a whole new range of liquor-bottle sizes—a third, a sixth, a twelfth and a twentieth of a gallon. The Bureau of Internal Revenue, which must decide, heard testimony from *Dr. Frank M. Shipman* of Brown-Forman that the added sizes would increase bottling costs alone, for the industry, by $16 million a year. Beyond that, he said, there would be increased costs all along the line—for bigger inventories of both empty and filled cases, for installation of additional bottling facilities, for the change and inventory of labels. And the cost of larger in- [*Continued on page 40*]

Background for Packaging

[Continued from page 39]

ventories—as well as the possible loss of dollar volume—would be felt as well by wholesalers and retailers, he said.

Don't underestimate paper—it still accounts for more than 50% of the dollars spent on packaging, according to *R. Carl Chandler*, chairman, Standard Packaging Corp. He figured the cost of all packaging materials in 1958 at $10.3 billion and component paper materials at $5.4 billion. He said that while all containers and packaging materials produced in the 1950s increased at an average dollar rate of 3% per year, paper containers gained at a rate of 4.1%. Interesting observation: "Last year the nation spent 75% more for packaging than it did for advertising." Advertising expenditures are estimated at $11 billion.

The package must show the country of origin of imported merchandise, Federal Trade Commission holds. In a recent case, FTC ruled that it was not sufficient to have "Hong Kong" or "Japan" stamped on inside links of expansion watch bands when this information does not appear on packages and is not visible through packages. Indications are that FTC is launching a campaign against deceptively packaged imports.

Note group action by plastic food-container manufacturers to set up quality standards in this burgeoning field. Plastic Food Container Assn., formed in Chicago, has 16 company members, with six others expected to join. They would cover molded and thermoformed-sheet plastic containers—excluding film. There is concern about opportunists entering the field to make a quick killing, with attendant lowering of quality standards.

Watch aerosols move more heavily into the field of powdered products. Recent developments in propellants and techniques have brought marked improvement in powder dispensing, so that a considerably higher percentage of the product can be expelled. This had previously been the great drawback of powder aerosols. Now tooth powder and talcum powder are being test marketed in aerosols for the first time and, if successful, will open the way for an estimated 2,000 other powder products.

Wider field for high-density polyethylene bottles awaits only expansion of blow-molding capacity beyond the needs of liquid detergents, which presently are taking the bulk of HD production. Next big areas: household bleaches, shampoos, chemicals. A recent survey by Phillips Chemical finds that 25% of the toiletries and cosmetics products presently in glass and 15% of health and medicine items now in glass are logical customers for HD polyethylene bottles. Shampoos, hair tonics, dressings and colorings alone took 590-million glass bottles last year.

Significant effect of the recent Color Additives Amendment is to remove color additives as such from the scope of the Food Additives Amendment of 1958 and thus to replace the ambiguous word "harmless" with provisions giving the Secretary of HE&W authority to spell out safety in terms of conditions of use. However, certain problems remain. Manufacturers of certain food additives which may have an incidental coloring effect wonder whether they come under both laws. The Certified Color Industry is pressing F&DA to issue regulations exempting products other than those conventionally used for the specific purpose of coloring.

Packaging is absolved in the health scare in The Netherlands involving Unilever's Planta brand of margarine. A mysterious outbreak of skin rash among Dutch consumers of the product is reported to have caused 50,000 illnesses and two deaths. Unilever has expressed "profound dismay" and has asked for an independent investigation. A vacuum-formed plastic package for Planta, recently described in MODERN PACKAGING (Sept., '60, p. 131), is not involved since this package is used only in Switzerland and Portugal. *Suspected cause:* A new anti-splatter ingredient, introduced in the product only in The Netherlands.

For Creative Packaging

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. . . Like Sealtest Successfully Did!



The Problem:

To create a freezer package for Sealtest new Frozen Florida Orange Bars which would translate on sight the pure Orange goodness of the contents; and to do so in the most convenient manner. Box versus bag? Polyethylene versus other materials? Pennies versus dollars?

The Solution:

Kehr's Creative Department designed a package which actually simulates the orange bags seen in the market places since time immemorial; then added to that "fresh orange" association the necessary design elements.

The Result:

The handsome, salesworthy package you see here, flexographic printed in 4 colors on DuPont 2-in-1 polyethylene, 1.5 mil. A triumph of mind over matter again . . . thanks to Kehr's Creative Department!

Call In Kehr, Too:

Send us your knottiest problem—or one of your more obsolete-looking packages. Let our Creative Department work on it for you. No charge, no obligation . . . and nothing ventured, nothing gained . . . so do it now!

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Pick a Number!

There are only four basic numbers in Fenwal's new "500" Line of Electronic Temperature Controllers and Indicators. But they provide industry with a broad choice of instrumentation *not available elsewhere!*

For example, a packaging machine manufacturer might have the problem of controlling 6 heater blocks on a unit capable of sealing a variety of films. He'd want separate control of each block — 3 "ON-OFF" and 3 proportioning — with remote adjustment of control. The Fenwal 536 Controller would give him all this. For indication during periodic checks, he'd simply add the 580 Indicator. *Price? Extremely reasonable!*

Again, take a packager whose machines are heat-sealing an easy-to-handle film. Suddenly his market requires running a film sealed under *much closer* temperature control. Using a "536" he'd get precise proportioning control with adjustment at the instrument or remote . . . indication by adding a "580". Or, with the "561" he'd get *all* functions in a single package. In any case, *he'd buy only what he needed.*

Another manufacturer whose needs are only indication, might select the 582 Thermometer. And there are many *modifications* and *combinations* possible. Why not make *your* choice from these "Smarter Looking Smarter Acting" Fenwal Instruments? Write for Bulletin MC-190. FENWAL INCORPORATED, 611 Pleasant Street, Ashland, Massachusetts.



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International Paper has developed a new linerboard that cuts the cost of printing shipping containers by eliminating one entire printing process.

This discovery is new Goldkraft, one of International Paper's many rugged, specialty Gator-Hide® kraft linerboards.

At our Mobile, Alabama research center, a new process has been developed that builds golden color into the board *right on the high-speed papermaking machine*. New Goldkraft will save your company and boxmaker the substantial cost and time of an extra over-all color printing.

Goldkraft is another example of our ability to make strong, attractive and economical packaging papers and boards for industry.

Experimental papermaking processes are in continual development at International Paper's 16 mills and in its research centers. Last year, our staff of 322 package and research counselors answered inquiries at the rate of one every 7 minutes.

International Paper can provide you with the widest range of papers, boards and packaging assistance in the industry. Call us or contact your converter—he's probably been doing business with us for years.

*T. M.

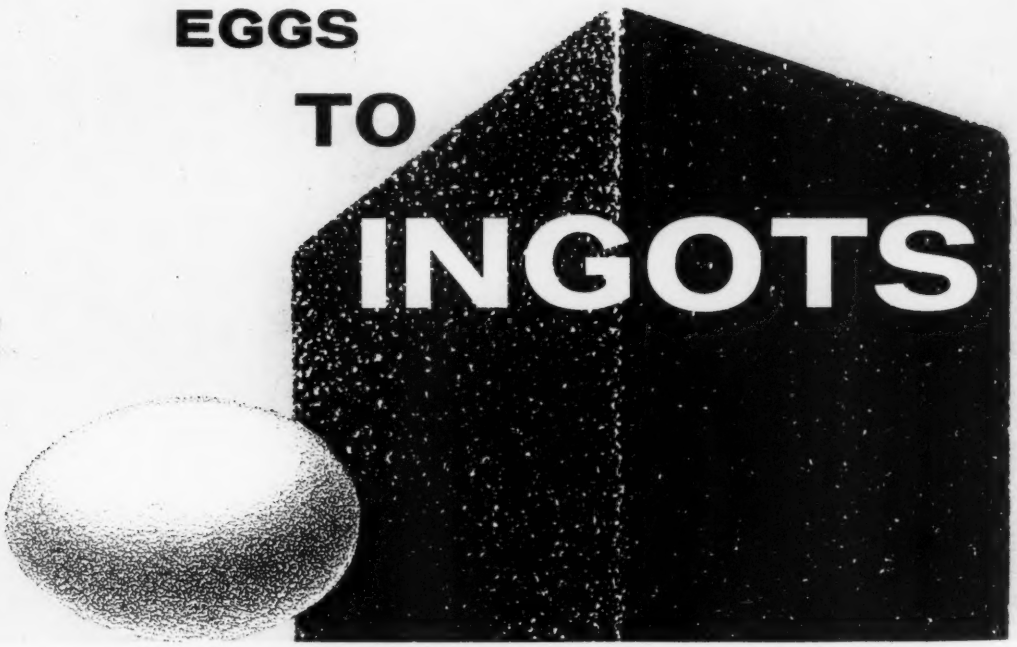


INTERNATIONAL PAPER New York 17, N. Y.

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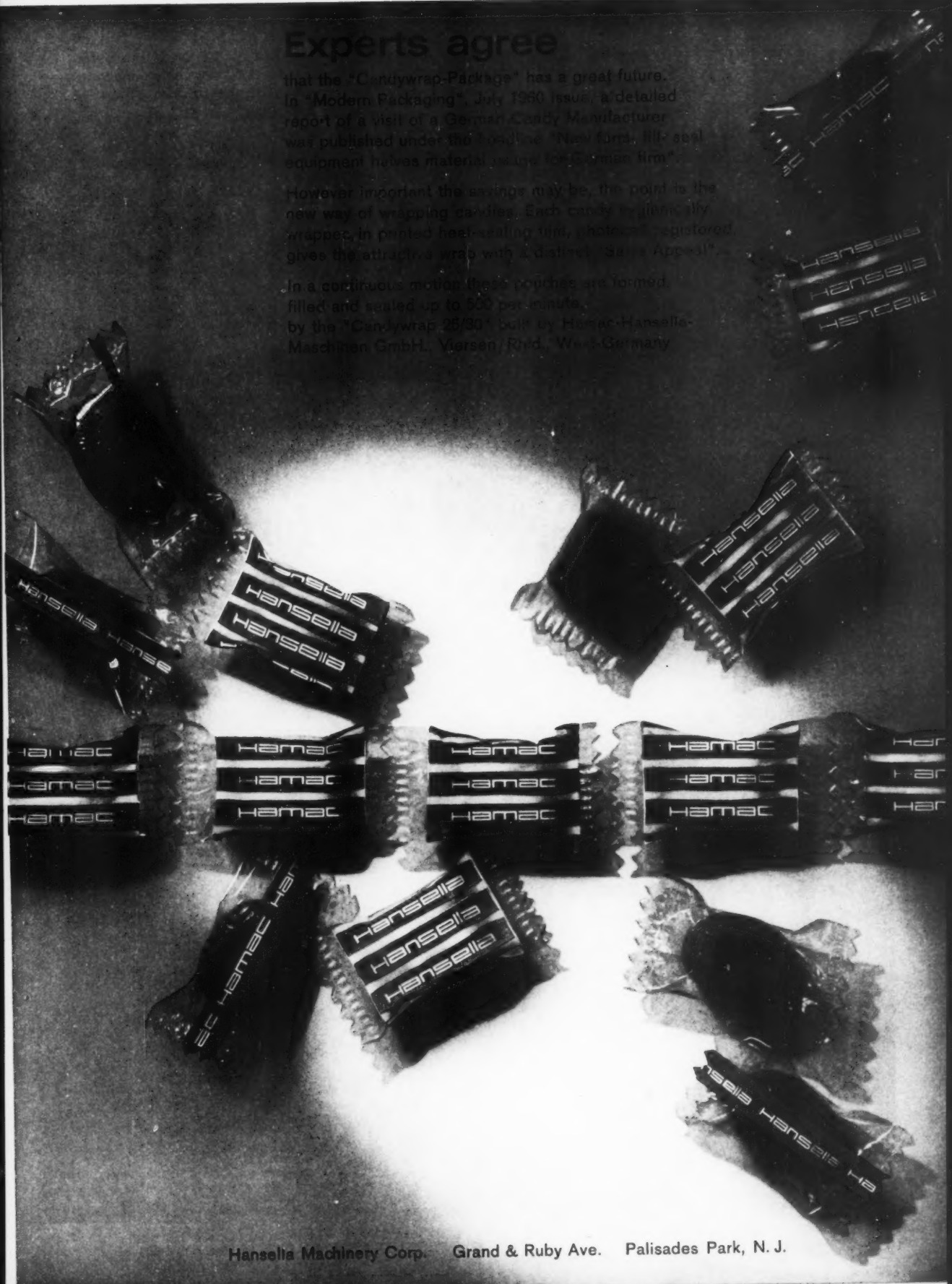
Manufacturers of: "Whippet"® conveyor line marking device • #7 Auto-Printer® for knocked-down cartons and multi-wall bags • Rainbow coder®-imprinter attachment for marking flexible wraps • Flexopress – for instant drying printing on almost any surface, sheet or web.

Experts agree

that the "Candywrap-Package" has a great future. In "Modern Packaging", July 1960 issue, a detailed report of a visit of a German Candy Manufacturer was published under the headline "New form, fill- seal equipment halves material usage for German firm".

However important the savings may be, the point is the new way of wrapping candies. Each candy is gliamically wrapped in printed heat-sealing film, plastic - coated gives the attractive wrap with a distinct "Sales Appeal".

In a continuous motion these pouches are formed, filled and sealed up to 500 per minute, by the "Candywrap 26/30" built by Hansella-Maschinen GmbH., Viersen/Rhld., West-Germany



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Whatever your product, whatever protection it needs, whatever design you want—Alcoa, world leaders in aluminum closures, can supply the bright, eye-catching cap to do the job. Or will design and develop one, custom-made to your requirements. That goes for every field from foods, liquors, wines and pharmaceuticals—to dairy products, toiletries, medicines and drugs, household and chemical items.

Pilferproof Roll-On Closures—give amazingly economical tamper-proof protection. Unique locking "bridges" snap loose with a slight twist, caps open easily . . . reclose tightly. Here's the most effective, most economical guard against pilferage on the market today.

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CLOSURES

Tops for selling... Tops for sealing...



Flavor-Lok' Easy-Off, Easy-On Closures—are designed to meet the extreme sealing demands for such high-spoilage items as ketchup and baby food. They retain a vacuum, are acid resistant. And friendly-to-food aluminum ends tarnishing and corrosion.

Standard Roll-On Closures—replace prethreaded caps in hundreds of food, beverage, chemical and pharmaceutical applications. Like all Roll-On caps, every closure is custom-tailored to the individual bottle, assures the greatest sealing quality.

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Dairy Closures—the most inexpensive, the best protective dairy seals. They're impervious to moisture, sterile and tamperproof, reflect heat, keep pouring lip of bottle sterile and clean during dairy handling and delivery.

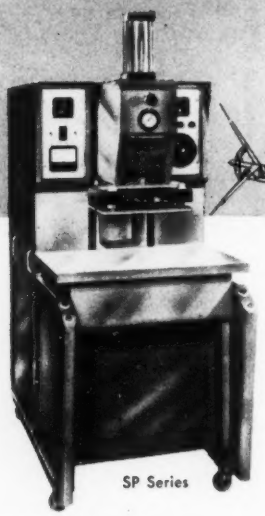
For information, call your Alcoa salesman, or write: Aluminum Company of America, 1729-L Alcoa Building, Pittsburgh 19, Pa. Worldwide sales through Alcoa International, Inc., 230 Park Ave., New York 17, N. Y.

Alcoa Aluminum Closures



Outstanding design means outstanding performance —





SP Series

RF HEAT SEALING MACHINES

The most modern of their kind, these completely self-contained units are the choice of packagers requiring fast, dependable sealing. Rugged construction and low-cost operation make them ideal for large, continuous operations. Generators have fully filtered power supply and one-knob DC power control. Press incorporates double "V" gib and slide construction. Models from 1.5 to 20 KW.



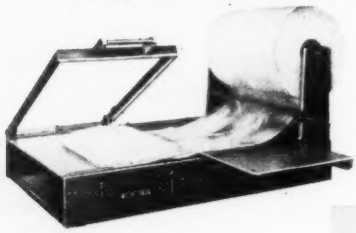
16 Series

THERMAL IMPULSE SEALING EQUIPMENT

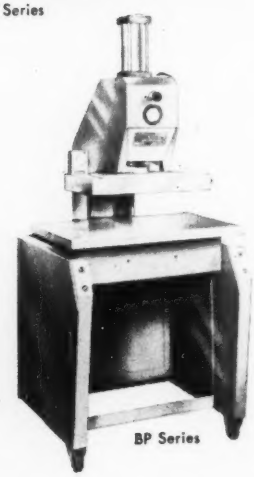
These WELDOTRON units provide the most economical method of poly sealing. Available with foot, hand or air operation, these easy-to-use machines are off except for the second when the seal is made, thus they require little electricity. Models from 8" to 96". Available in floor or table models, with or without automatic cut-off.

"Multi-Seal" Machine Forms Bags From V-Sheets

The "Multi-Seal" impulse unit shown here seals three sides of a package in one operation, therefore enabling packers to use rolls of V-Sheeted poly in place of costly preformed bags. Takes just seconds for an untrained operator to slip in the product and seal open sides. Seals sheets of any width from 2" to 24". Same quality construction and power-saving features as other WELDOTRON impulse units.



L Series



BP Series

BLISTER PACKING MACHINES

Automatic sealing of large quantities of blister packages can be done most economically with WELDOTRON. These machines seal up to 6" deep blisters to coated cards at an extremely high rate of production. Construction features include larger than average press, accurate precision plate, swivel hood protecting double "V" guides, built-in pressure control, automatic 2-hand push-button operation. Rotary Models Available.

For complete information on these or any other Weldotron equipment, please write Dept. F.

WELDOTRON CORPORATION

841 FRELINGHUYSEN AVENUE, NEWARK 12, N. J. *Telephone:* TA 4-1096

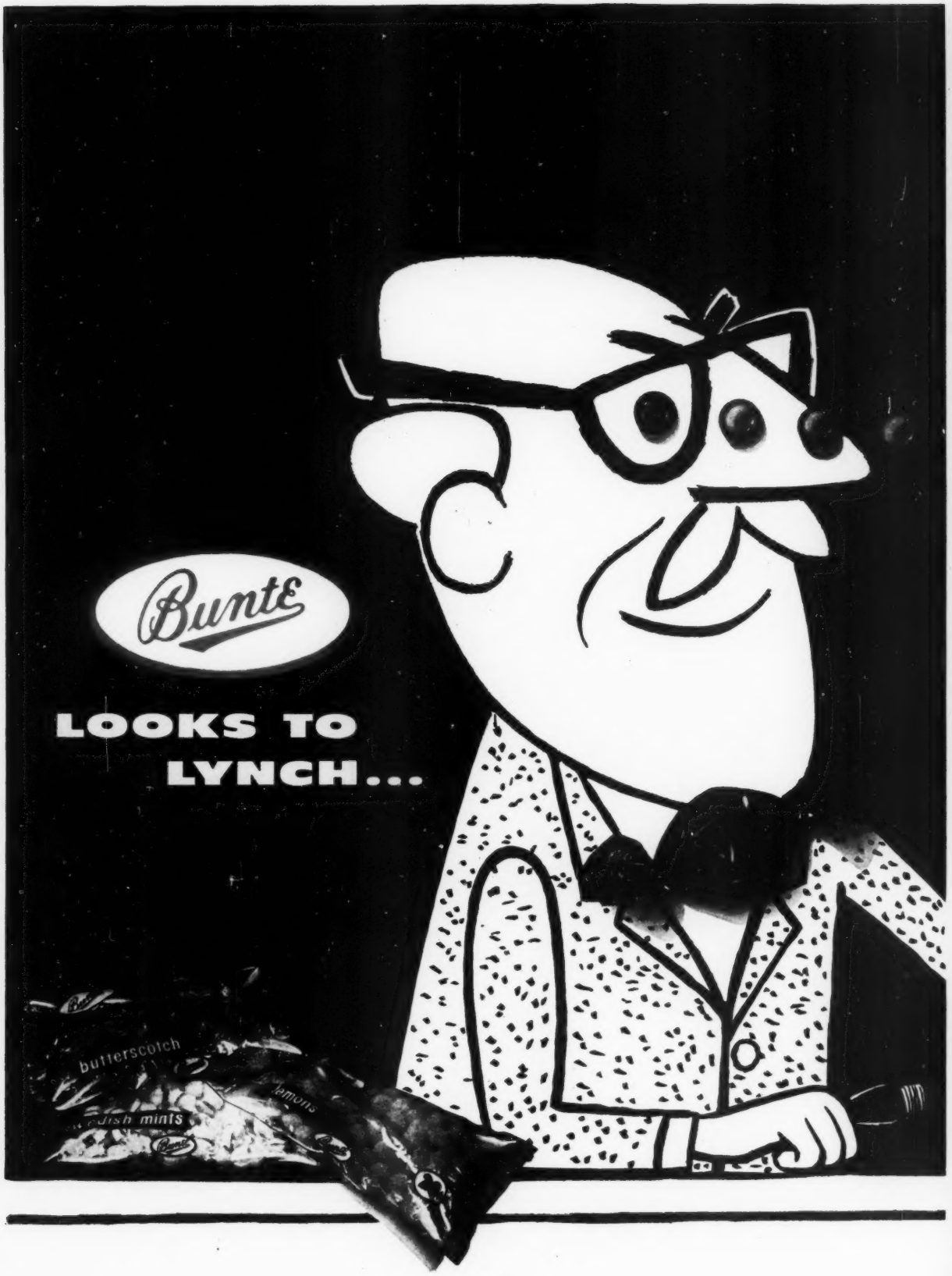


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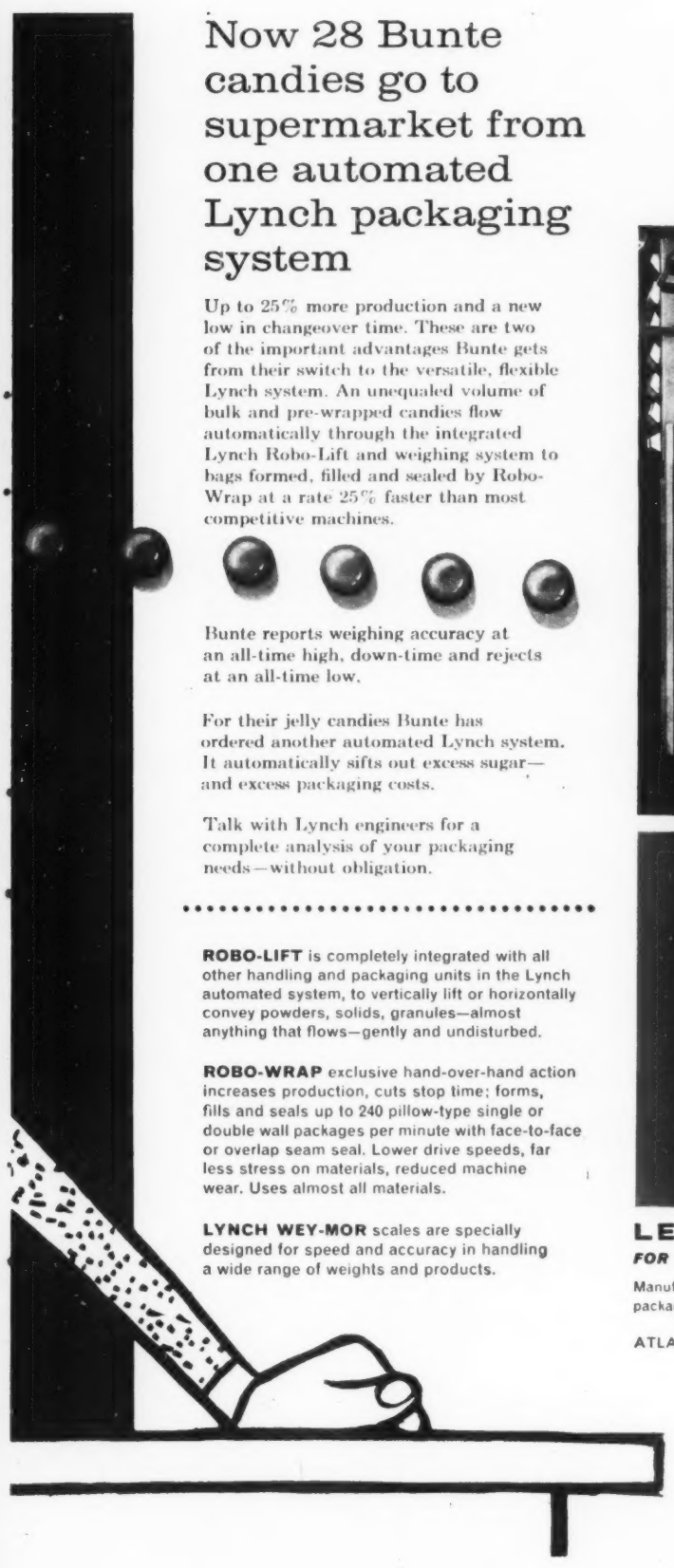
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No more stop-and-go! No more series of separated steps in merchandise tag and booklet production. Not with a New Era Press! In just *one* pass, it *completes* the job! It prints multi-colors on one or both sides; perforates; punches; patches and eyelets; die-cuts; numbers; cuts off corners; cuts off singly or in gangs. Does all this with *any type of tag or booklet stock*, delivering up to *7,500 impressions* an hour! Find out more! Write on your letterhead for free Bulletin 211. New Era Manufacturing Co., Dept. MP-11, Box #400, Hawthorne, N.J.


Bunte
LOOKS TO
LYNCH...
butterscotch
lemons
dish mints

Now 28 Bunte candies go to supermarket from one automated Lynch packaging system

Up to 25% more production and a new low in changeover time. These are two of the important advantages Bunte gets from their switch to the versatile, flexible Lynch system. An unequaled volume of bulk and pre-wrapped candies flow automatically through the integrated Lynch Robo-Lift and weighing system to bags formed, filled and sealed by Robo-Wrap at a rate 25% faster than most competitive machines.



Bunte reports weighing accuracy at an all-time high, down-time and rejects at an all-time low.

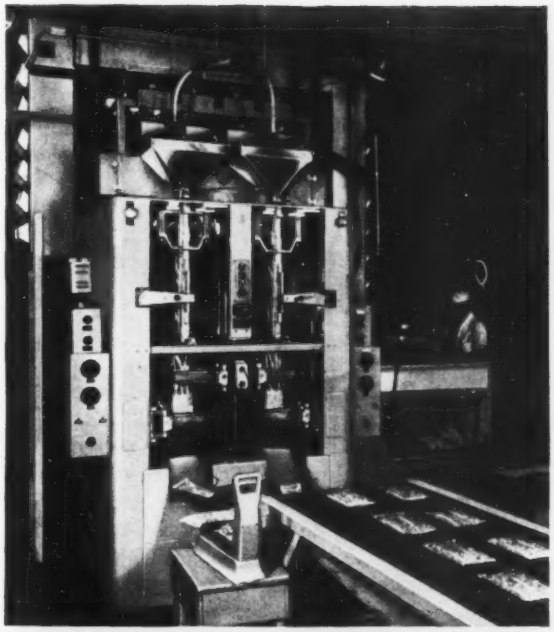
For their jelly candies Bunte has ordered another automated Lynch system. It automatically sifts out excess sugar—and excess packaging costs.

Talk with Lynch engineers for a complete analysis of your packaging needs—without obligation.

ROBO-LIFT is completely integrated with all other handling and packaging units in the Lynch automated system, to vertically lift or horizontally convey powders, solids, granules—almost anything that flows—gently and undisturbed.

ROBO-WRAP exclusive hand-over-hand action increases production, cuts stop time; forms, fills and seals up to 240 pillow-type single or double wall packages per minute with face-to-face or overlap seam seal. Lower drive speeds, far less stress on materials, reduced machine wear. Uses almost all materials.

LYNCH WEY-MOR scales are specially designed for speed and accuracy in handling a wide range of weights and products.



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FOR MACHINES THAT PACKAGE ALMOST EVERYTHING

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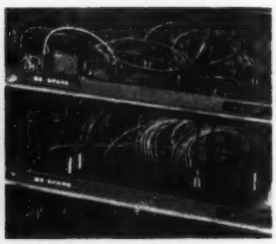


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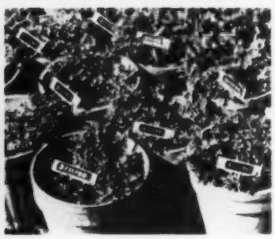




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Note the vibrator test photographed at the left. It simulates the rugged conditions that stacked multiwalls endure in freight cars. And it is only one of dozens of tests that back up our Technical Serviceman.

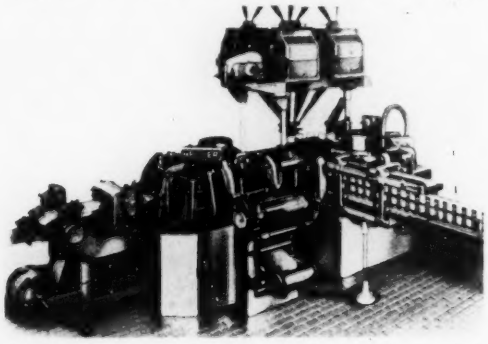
For information about this better kraft paper, call or write: Kraft Division Sales, West Virginia Pulp and Paper Company, 230 Park Avenue, New York 17, New York.

West Virginia Pulp and Paper

Equipment & Materials

New automatic coffee bagger

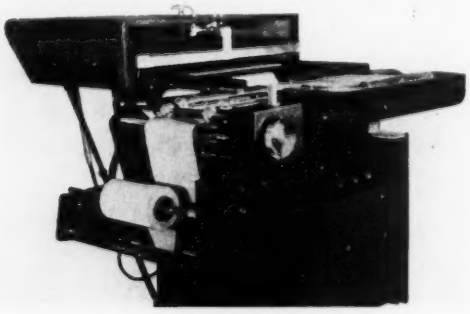
Coffee bags with an inner liner of rubber hydrochloride film are formed, filled and sealed on Fr. Hesser's new automatic Model PDBR 3f coffee-bagging machine. The company reports that water-tight and air-tight bags can be made, filled and closed on the machine at a rate of 60 per



minute. The reel-fed liner film is formed around a mandrel, with its sides and bottom fin-sealed. Then the outer paper bag is glued around the liner, after which the empty bag travels to the filling wheel. Automatic weighers at the filling station fill the bags to pinpoint accuracy, says the supplier. After filling, the bags are vibrated to settle the contents; then the bag tops are sealed closed and the filled containers are discharged on a conveyor belt. An automatic height adjustment is designed to compensate for varying product densities. The machine is of open construction, for easy access to its parts. *Fr. Hesser Maschinenfabrik A.G., Nauheimer Strasse 99, Stuttgart-Bad Canstatt, Germany.*

Line of vacuum-forming machines

Product Packaging Engineering reports the availability of a variety of machines for vacuum forming, skin packaging and blister packaging. Among this equipment is the Pak-O-Vac Model 7A (shown), a vacuum- and blister-forming machine which is said to accommodate most thermoplastic materials. Formed parts are produced automatically in a continuous strip. It has a mold area of 16 by 28 in. Maximum draw is 4 in. According to the supplier, the machine will turn out 1,000 or more 1-by-1-in. blisters per minute. Also available is an automatic rotary blister sealer which can be pre-set for any specific production requirements. Among other machinery offered by the supplier is the Model 24, a single-station vacuum-forming unit which employs a



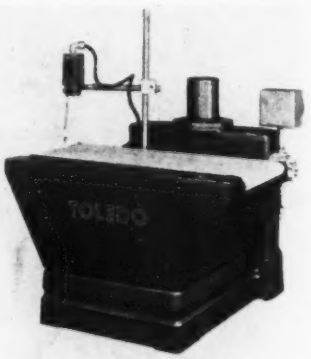
vacuum cylinder for drape frame operation. Cycling is automatic after the oven is in position. The machine has a vacuum-adjustable valve that reportedly permits distortion-free skin packaging of a wide range of products. Details on these and other units are available from *Product Packaging Engineering, Culver City, Calif.*

Two film-grade polyethylene-resin series

Dow Chemical offers two new series of film-grade polyethylene resins. The supplier's 660E series is an intermediate-density (0.930) resin engineered for overwrap and thin-gauge applications, such as the manufacture of garment bags. The resin is reported to produce a film of excellent clarity and surface gloss, increased stiffness and a high degree of drawdown. It is available in low- and medium-slip variations. The other new series (561E through 564E) consists of low-density (0.921) resins which are said to produce high-impact film with exceptional gloss and clarity. Available in low-, medium-, high- and extra-high-slip variations, the resins are especially suited to the production of film bags for soft goods and produce, says the company. *The Dow Chemical Co., Midland, Mich.*

Intermediate-range checkweigher

An automatic, intermediate-range checkweigher, which accommodates items weighing from 2 to 25 lbs., is being offered by Toledo Scale. Called the Model 9463, it handles packages up to 12 in. wide by 12 in. long at a rated speed of 60 per minute. Equipped with a motorized conveyor, the new unit is claimed to eliminate spot checking and manual methods. Among the types of package that can be check-weighed by the device are bags, cartons, boxes, tubes and cases. The unit adjusts from one package weight to another by resetting poises on beams housed in a locked enclosure. A pilot-light attachment is available to show the weight zone (under, OK-light, OK, OK-heavy, and over) into which each package falls. *Toledo Scale, Div. Toledo Scale Corp., Toledo 12, O.*



In-line bottle and can packer

Savings in labor, maintenance and floor space are features reported by Emhart for its new SK-860 in-line bottle and can packing machine. The unit also accommodates six-pack carry cartons. A positive, pneumatically operated case divider separates incoming single-file cases into two lanes, to supply two case feeds. Bottles, cans or six-packs entering the packer than are separated into lanes and are carried to grid areas where the packs are formed. When a case is in packing position on a case feed and a full pack is present on its grid, containers are lowered through the grid and placed into the case by spring-steel fingers. The case is then lowered and discharged by the case feed. According to the

ANNOUNCING

a new, transparent film to help cut packaging costs

VISOLYTE *Polystyrene film by VISKING*

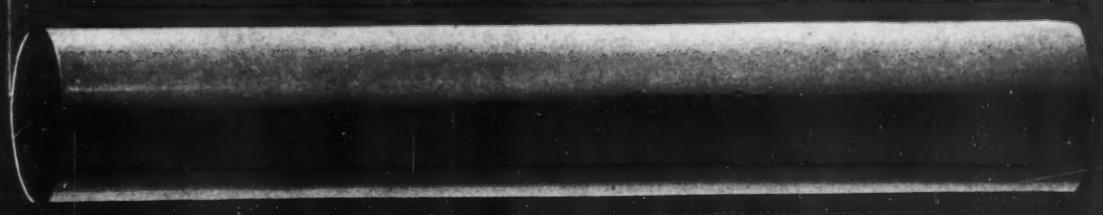
Economies are immediately evident, both on a price basis and on yield. Initially less costly than currently popular films; in addition, the yield per pound is 26,300 square inches compared with the 19,500 square inches normally obtained from cellophane, and the 23,000 square inches obtained from acetate.

Biaxially oriented VISOLYTE film has excellent dimensional and aging stability. It will not dry out under low-humidity conditions—stores well—does not shrink or become brittle in storage. Its optical properties are unsurpassed for gloss and clarity of product display. No pre-treatment is required—printing on VISOLYTE film alone or on VISOLYTE film laminated to paper backing or high impact styrene is crisp and clean, producing brilliant, eye-catching wraps that help move merchandise.

VISOLYTE film is heat sealable or may be sealed to itself or to porous surfaces using economical, room temperature liquid adhesives. VISOLYTE film is available in 44" maximum width rolls. It can be used on most conventional equipment.

VISOLYTE film is highly recommended for: lamination; overwrap for candy, cards, games and puzzles; tomato tubes; use in window boxes and window envelopes.

For complete technical information and samples, write today.



UNION CARBIDE

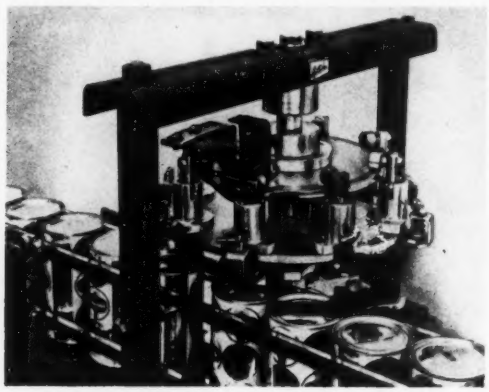
supplier, change-over from one container or case size to another takes about 20 min. For details, contact *Emhart Mfg. Co., Portland Div., Portland, Conn.*

Price cut for polystyrene sheet

Plax Corp. reports price reductions of 16% and more for certain categories of its Polyflex line of biaxially oriented polystyrene sheet. The price cuts apply to general-purpose and forming grades of the material, including gauges between 5 and 20 mils. Effective Sept. 1, the reductions bring the per-pound price of the supplier's polystyrene sheet (in custom-run, quantity orders) to 48 cents. The company also reports that it is now offering crystal-clear and white opaque Polyflex sheet at the same price level. Additional data are available from *Plax Corp., Hartford, Conn.*

Improved can- or bottle-top coder

Gottscho reports that it has redesigned its Model TMT Markocoder, a conveyor-line machine which imprints codes and other data on the tops of cans, bottles, jars and other



items. The improved design is said to permit straight-through travel of containers, for uninterrupted product flow. Also, says the supplier, there is no need for cutting conveyors or for installation of dead plates. Maximum imprinting speed on the unit, which is powered by the container stream passing through, is rated at 1,000 per minute. Eight separate printing heads register imprints in the same spot on each successive container. A cam-activated mechanism automatically compensates for varying container heights. *Adolph Gottscho, Inc., Hillside, N.J.*

Automatic-bottom cellophane bag

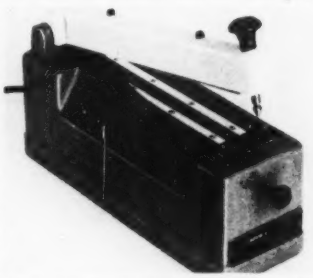
The Flexible Packaging Div. of Continental Can is now offering an automatic-bottom cellophane bag that will stand erect on store shelves. The new bag's combination of transparency and erectness is said to make it ideal for the packaging of cookies, candy, rice and many other products. It is available in a variety of sizes, ranging from 4 oz. to 5 lbs. For additional details, contact the supplier. *Continental Can Co., Flexible Packaging Div., Mt. Vernon, O.*

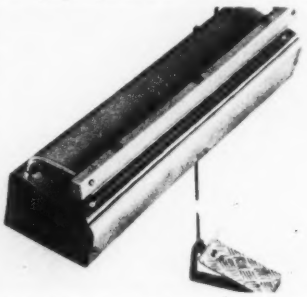
Labels adhere at low temperature

A pressure-sensitive labeling material, developed for use on food packages which are kept under refrigeration, has been introduced by Fasson Products. It is reported to adhere firmly to rigid container surfaces and to all types of packaging films, including cellophane, polystyrene and saran. It has been tested and proved satisfactory at temperatures as low as minus 20 deg. F., the supplier says. The material, available in roll form, can be die cut to any size or shape and is printable in multicolor. Further details can be obtained from *Fasson Products, Painesville, O.*

Polyethylene impulse sealers

Two new polyethylene-sealing units, designed for economy and ease of operation in small-volume and in-store packaging operations, have been introduced by a Dutch firm, Audion Elektro. Both units, said to be low in cost, operate on the impulse-sealing principle. This feature, says the supplier, eliminates waiting time for the start-up of sealing-table heat and makes the devices as easy to operate as a hand stapler. The new units are the Sealboy 700 (shown above) and the Sealmaster 420 (below). Both are electically powered. Any product packageable in polyethylene film can be adapted to these machines, the company reports. Sealing time for the Sealboy 700, whose sealing width is 8 2/5 in., is said to range from ½ to 2 sec., depending on film thickness. The compact new unit, which is activated by pushing down on the sealing bar, is 12 4/5 in. long, 4 in. wide and 8 in. high. The other sealer, the Sealmaster 420, is activated by a foot treadle (illustrated) or by a hand attachment. It reportedly will accommodate film thicknesses ranging from one to 10 mils without changeover. Additional data on these impulse sealers can be obtained from *Audion Elektro, Groenburgwal 31, Amsterdam, Holland.*





New die-cutting versatility

United Shoe Machinery reports that its Hytonic die-cutting machine, used for cutting plastics, paperboard and other packaging materials, can now be used to die cut conductive materials. The secret, says the supplier, is a newly developed stroke control switching arrangement that enables the machine to operate hydraulically as well as electronically. Heretofore, the unit has been used only for die cutting non-conductive materials, because of its electronic control feature. For additional information, contact *United Shoe Machinery Corp., 140 Federal St., Boston 7.*

Glass-decoration sample kit

A new kit of samples has been made available by Ceragraphic to illustrate the varied possibilities of decorating glass containers with its Ceracote process, which is called "a wrap-around color jacket for glass packaging." The samples (capped glass containers) illustrate the techniques for full side area coverage without seam or break; window and filigree effects; transparent, translucent and opaque treatments; satiny matte and high-gloss enamel finishes; raised relief effects; fine lines, and textured embellishments. Promotional literature points out how such decoration converts stock bottles, both clear and opal, to custom design without



[Continued on page 166]

MERCURY CAN SAVE YOU UP TO $900 PER THOUSAND BAGS



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PRODUCT

1. .....
2. .....
3. .....

Personnel Required	Bag Cost	Bag Size	Weight of Product	No. Used per Year

Send sample of product in your present package.

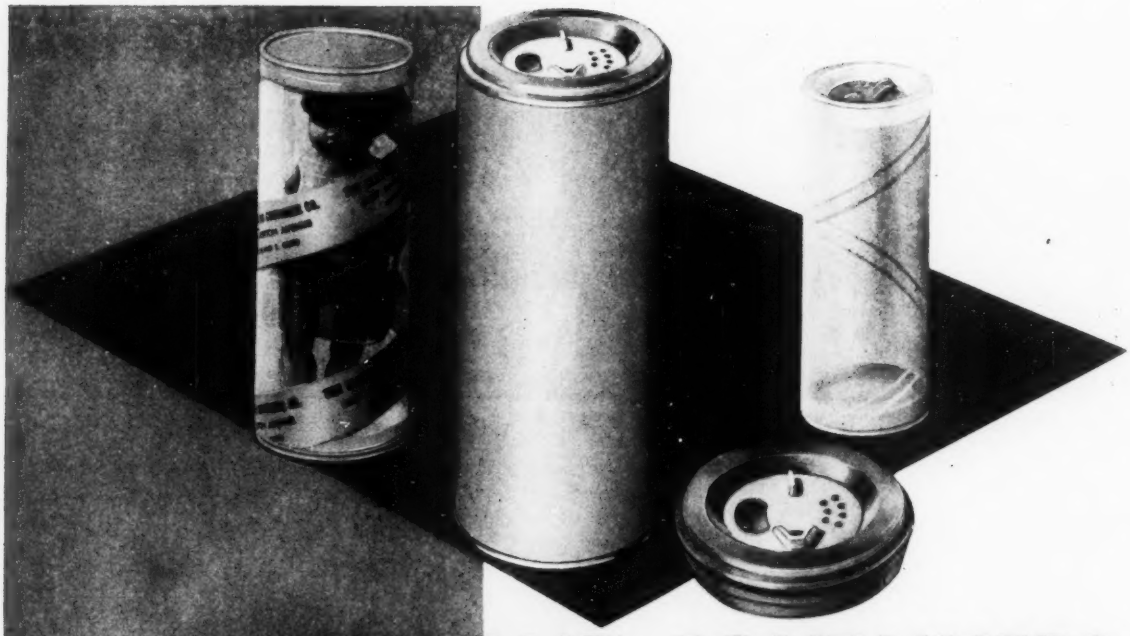
Labor Rate $ ..... per hr. Fringes $ ..... per hr. Value of Product per lb. .....

Machinery presently in use .....

Name of Company .....

Address ..... City ..... St. .....

My Name ..... Title .....



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ARE DURABLE...ATTRACTIVE...PRACTICAL

Functionally engineered and strikingly styled . . . designed for a wide variety of products that must "sell on sight!" Note typical examples above: Left . . . a C-THRU container featuring a plastic plug top and bottom, with a spirally wound printed band; right . . . transparent C-THRU container with plastic plug bottom and plastic dispensing top. Center . . . a can with a fibreboard body, metal bottom, and a dispensing top especially designed for easy stacking.

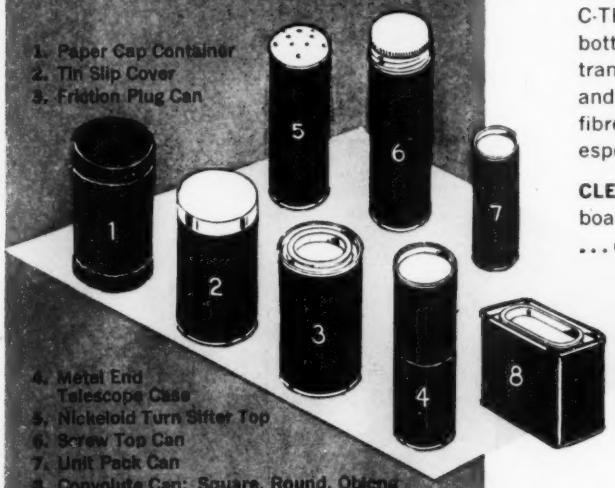
CLEVELAND CONTAINERS are made of strong fibreboard . . . spiral or convolute . . . all paper or composite . . . engineered for specific products.

Labels, wrappers, or direct printing provide **attractive**ness. Available with moisture- and **grease**-resistant liners. Wide range of metal and plastic closures.

Large production capacity . . . prompt deliveries . . . ensure complete satisfaction. Write nearest plant for our latest Packaging Brochure.

BASIC DESIGNS

1. Paper Cap Container
2. Tin Slip Cover
3. Friction Plug Can
4. Metal End Telescope Case
5. Nickeloid Turn Sifter Top
6. Screw Top Can
7. Unit Pack Can
8. Convolute Can: Square, Round, Oblong



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LONGER-LASTING CLARITY AT LESS COST



This remarkable polyethylene cast film lasts far longer on the shelf than cellophane . . . eliminates wrinkled and split wraps . . . stacks easier . . . yet costs you less. And METAPLENE is crystal-clear . . . its richer gloss accentuates that "quality look" so essential in self-service stores.

METAPLENE – now the clearest poly film on the market – is a medium density polyethylene film with the high tensile strength, stiffness and uniformity essential for high speed production on modern packaging equipment. You can use it to package almost any product . . . so now you needn't bother with several cast films for your diversified line.

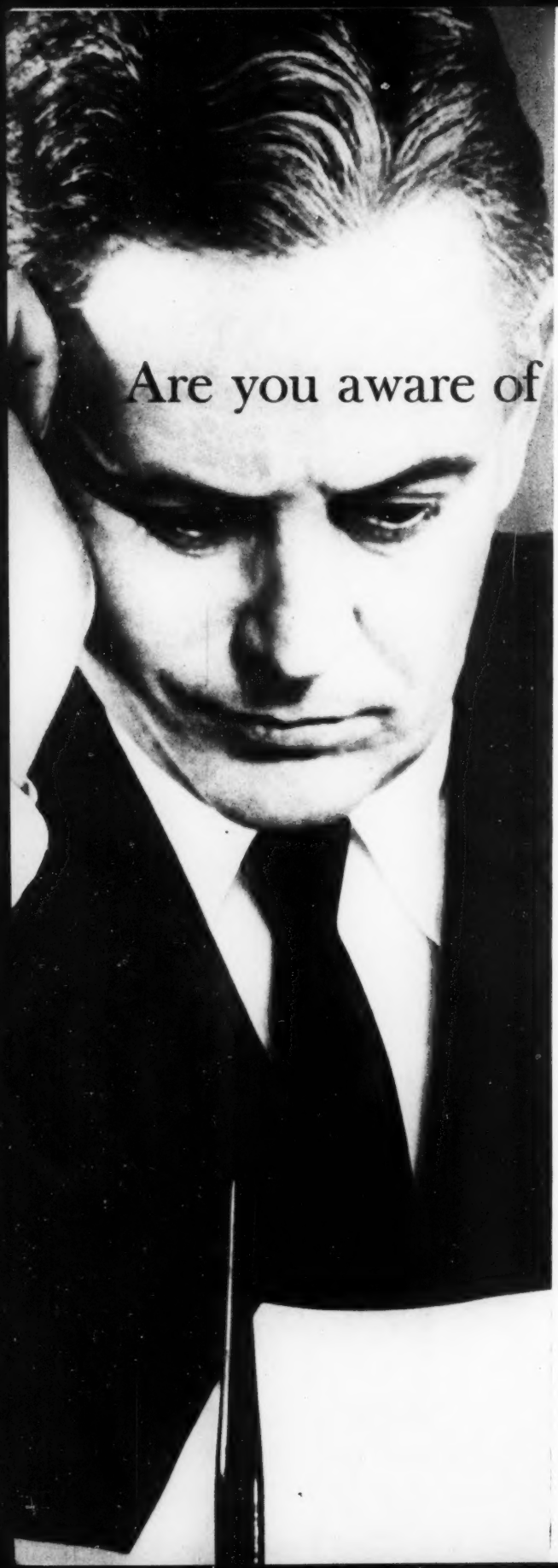
Excellent printability and no heat sealing problems are still other important advantages that explain why more and more manufacturers are packaging the METAPLENE way. Ludlow supplies flat film up to 72 inches in width . . . with a thickness tolerance of plus or minus 5%.

Why not learn about all the advantages of crystal-clear METAPLENE? Write today for samples and technical data on this and other new plastics made by Ludlow's new cast film process. Write Dept. MP 110.

Ludlow

LUDLOW PLASTICS

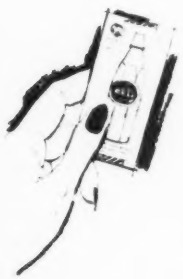
plastic coated materials, films, and other flexible materials for packaging and industry
A DIVISION OF LUDLOW CORPORATION, NEEDHAM HEIGHTS 94, MASS.



Are you aware of all the advantages of

Like any other packaging material you may consider, polyethylene coatings must meet the basic tests of protection, production and price. The dynamic growth of the use of polyethylene coated substrates during the past few years is cogent evidence that polyethylene coating resins do indeed satisfy these needs.

But are you aware of all the many ways these versatile resins can help you package a product more conveniently and economically, with more built-in consumer appeal? For example, a polyethylene coating on foil makes possible a popular portion pack of catsup, combining the convenience of individual servings with good product protection and easy heat sealing. Another example: a special process now makes certain polyethyl-



polyethylene coatings for your packages?

ene coatings gluable with low-cost dextrin or starch adhesives at economical high speeds. A folding carton coated by this process makes a highly effective single-ply barrier. Or consider the advantages of a coating of polyethylene inside a large industrial drum—the resistance to moisture makes these drums ideal for shipping liquids and wet solids, while the entire construction permits considerable weight savings and reduced shipping costs.



Naturally enough, not all formulations of polyethylene are equally suitable for all jobs. That's why Du Pont offers 12 basic formulations of ALATHON polyethylene resin for packaging, plus a great variety of specialized resins tailored to specific needs. The next time you have a packaging problem that might be solved by the use of a polyethylene coating, consult with your packaging supplier about the selection of the right formulation of ALATHON.

To help you evaluate the contributions that ALATHON *can make in your packaging operation, Du Pont has prepared a new booklet that discusses a wide variety of recent advances in packaging techniques and offers helpful information about the many compositions of* ALATHON *now available. For your copy of "*ALATHON . . . *new dimensions in packaging", write to:* E. I. du Pont de Nemours & Co. (Inc.), Dept. Y-11 Room 2507A, Nemours Building, Wilmington 98, Delaware.

In Canada: Du Pont of Canada Limited, P. O. Box 660, Montreal, Que.

ALATHON®

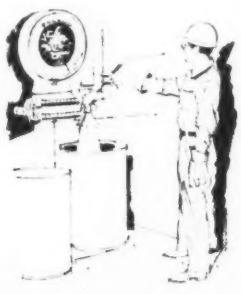
Du Pont's registered trademark for its family of dependable uniform polyethylene resins

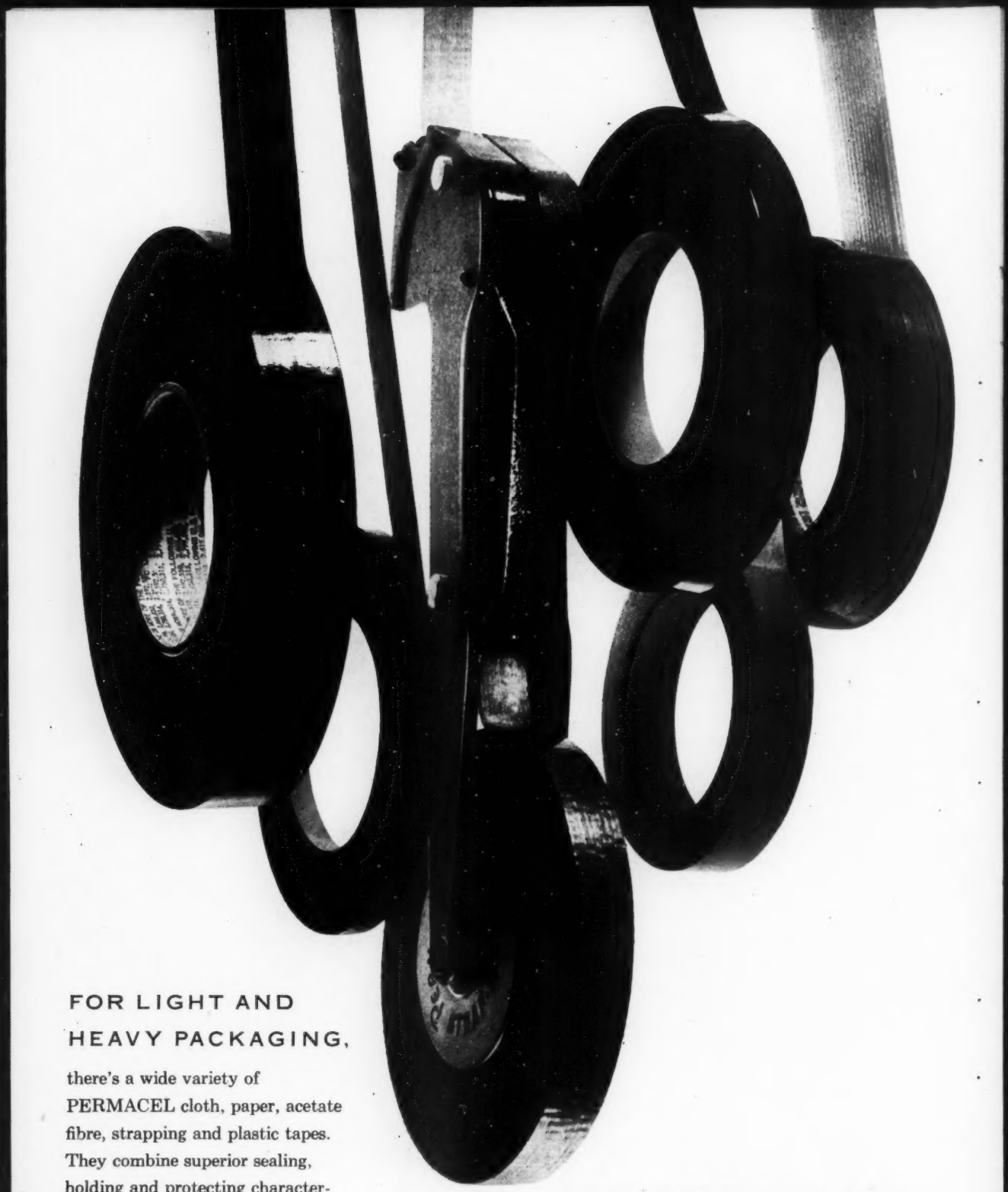
POLYCHEMICALS DEPARTMENT

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prevented with a Tickometer





Use basic labels, with blank spaces for mandatory data or specifications. Use a Tickometer — to imprint ingredients, size, color, weight, price or code number on labels as you need them — for the day, lot, pack or special order. When label changes are necessary, change your Tickometer imprint quickly and easily. Avoid the waste of unusable pre-printed labels, cut label inventories and printing costs.

- A Tickometer imprints accurately, with good register, from 400 to 1,000 pieces per minute — labels, wrappers, small cartons. Handles most weights and finishes of paper and light board; in sizes from 1 by 2 to 15 by 15 inches.
- Tickometers can be used for marking, stamping, endorsing, dating, cancelling — tags, tickets, sales slips, coupons, forms, checks, at a very considerable saving of time and work.
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Ask your wife. Or walk by the detergent shelves of any supermarket. All the big names are now in plastic or are converting. And containers like these, made for the leading brands shown here—and for many others—have been developed and produced by Plax. • The reasons behind this packaging revolution involve many things beyond the shopper's preference for the soft, light feel of plastic containers and their comforting unbreakability in the home. Manufacturers know that Plax skills have made these handsome packages competitive in cost while maintaining highest standards of quality. They don't smash, bend or leave rust rings on shelves. They can be beautifully designed, with an eye to function as well as strength. Most of all, they sell. • Plax has been making plastic containers, from drawing board to store shelf, for twenty-five years. When you switch to plastic, let us be of service.

PLAX CORPORATION, HARTFORD, CONN. • In Canada, Plax Ltd., Toronto

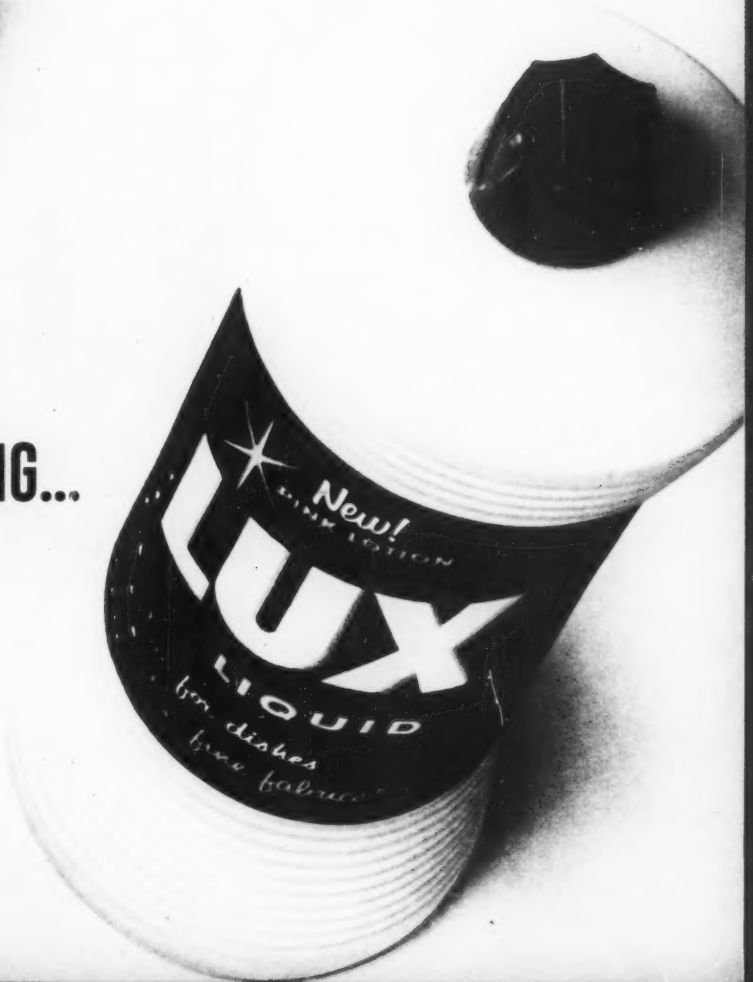
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PLAX GIVES A PACKAGE A PLUS

BIG NAMES YOU CAN DROP WITHOUT BREAKING...

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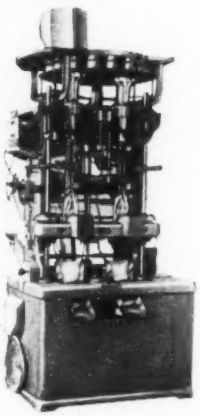




FMC Stokeswrap is "performance-proved" for dependable efficiency at Hershey

At Hershey Chocolate Corporation, the dependable, efficient operation of FMC Stokeswrap has been proved day after day for many years. A large battery of these machines is used to pouch-package a wide range of products such as Hershey-ets, candy-coated mint chocolates, milk-chocolate-covered almonds and Hershey Miniatures in both cellophane and heat-sealable paper.

Hershey is one of many well-known food packagers who depend on the proved design of FMC Stokeswrap for maximum production and minimum maintenance. The Stokeswrap handles practically all heat-sealable materials including polyethylene with models for pillow, four-seal and strip packages. Two and four-tube machines are available with pocket, auger, tablet counting, net weight or liquid feed systems offering a high degree of accuracy and a top speed of 240 packages per minute. Electric eye control with constant web tension assures accurate registration. Capacities range upward to $1\frac{1}{2}$ pounds depending on product.





For complete details, write for your copy of Stokeswrap Bulletin P-801.

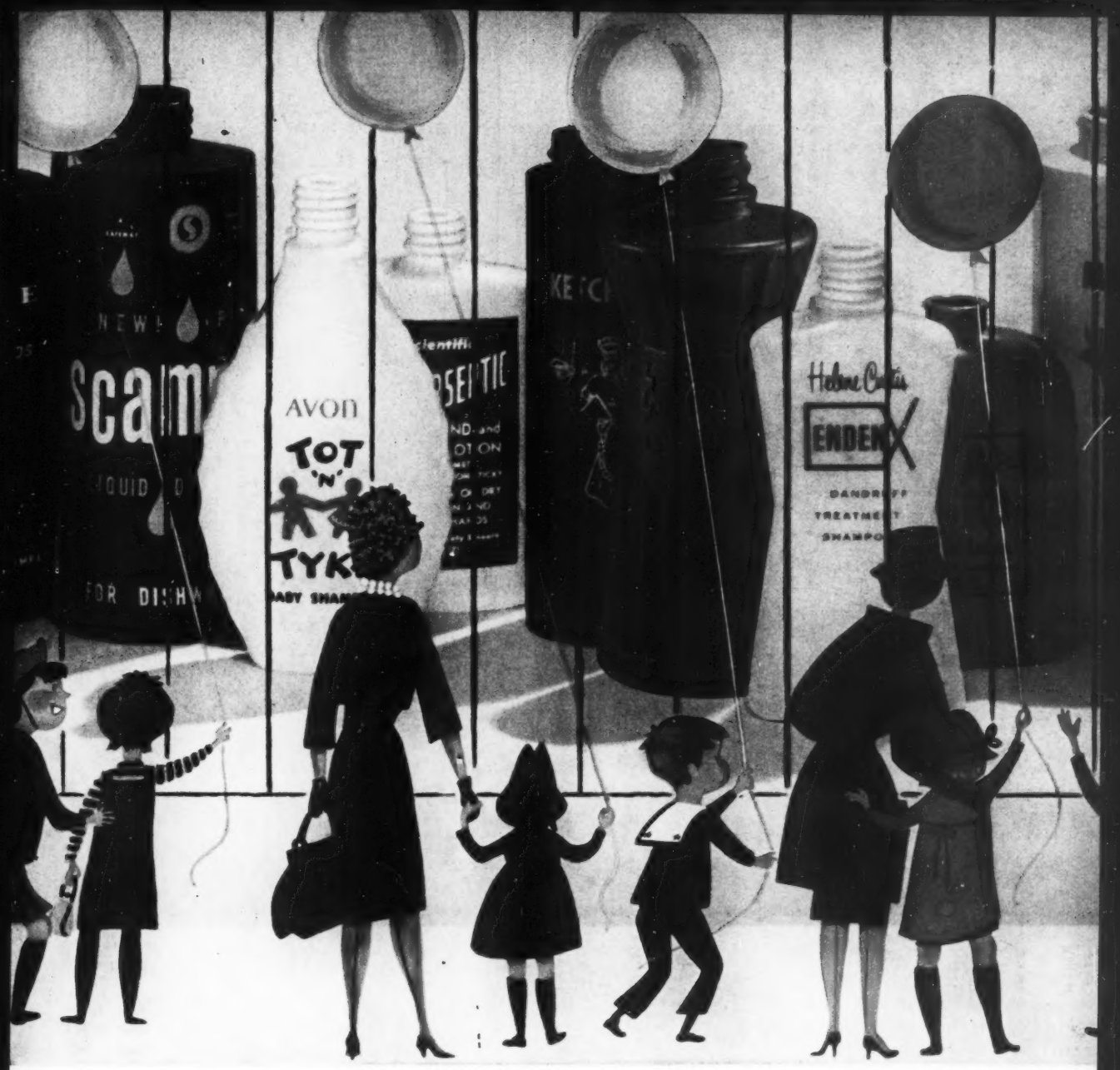
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FMC Packaging Machinery Division

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Your product stands alone...in

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...the ONLY see through display package!



-PAK*



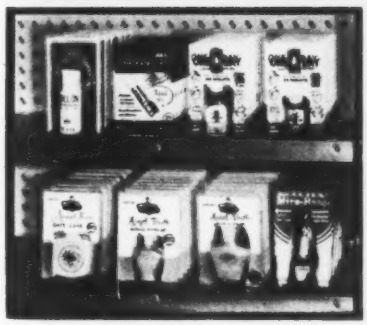
In today's fast-growing, highly competitive, self-service market the exclusive touch of unique packaging can make the difference. Such an innovation is Nevins' inspired, new Stretch-Pak Display Package that wraps your product into the selling message in a seemingly invisible film. The rewards are gratifying: products capture more display place, have greater see-ability, higher impulse appeal — **it's like putting your product on a pedestal wherever it is sold.**

The Stretch-Pak Display Package actually makes your selling message an integral part of the package itself . . . goes wherever your product goes . . . dominates a shelf, rack or counter. Your product appears to float in air, creating an irresistible urge to buy, surrounded by a colorful, selling message. Bright, easy-to-spot Stretch-Pak packages hang from pegs . . . can be stacked on shelves too . . . because Stretch-Pak can hold your product along the base of its display card.

Full dimensional Stretch-Pak can enfold more than one product on the same card, in virtually any size and shape . . . pilferage is discouraged. Your products can be custom-packaged by the Stretch-Pak division of the Nevins Company on machines of their own development or this equipment can be purchased for your own in-plant packaging.

Custom-designed Stretch-Pak Display Packages create a fascinating difference at point-of-sale — to increase sales where it counts! Write or call today for the full, amazing, new Stretch-Pak story.





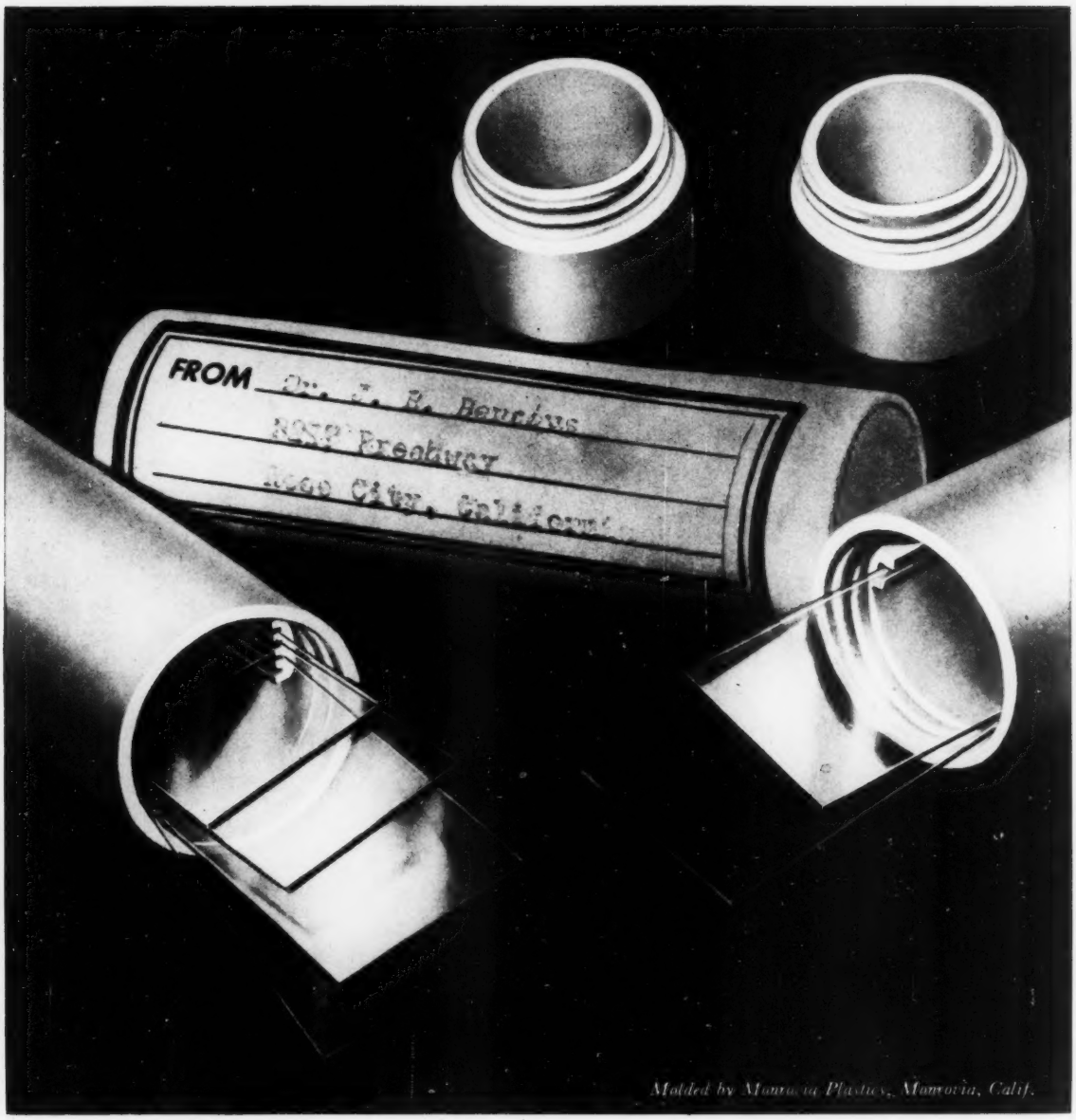
STRETCH-PAK Division

THE NEVINS COMPANY

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DESIGNING, PRINTING AND MANUFACTURING PRECISION FOLDING CARTONS, DISPLAY CONTAINERS AND MULTICOLOR LABELS SINCE 1902

The trademark, Stretch-Pak, is owned by the Nevins Company. Other trademarks shown here are owned by the well-known manufacturers of the products displayed within these packages.



Molded by Monrovia Plastics, Monrovia, Calif.

New SUPER DYLAN® container keeps glass slides safe!

You can drop this plastic container on a concrete floor and the glass micro slides inside won't break. Precision-molded grooves hold the slides firmly in place; the heavily-threaded plastic cap screws tight, keeping the slides from moving up or down. The container is lightweight, attractive and rugged. It won't chip or dent.

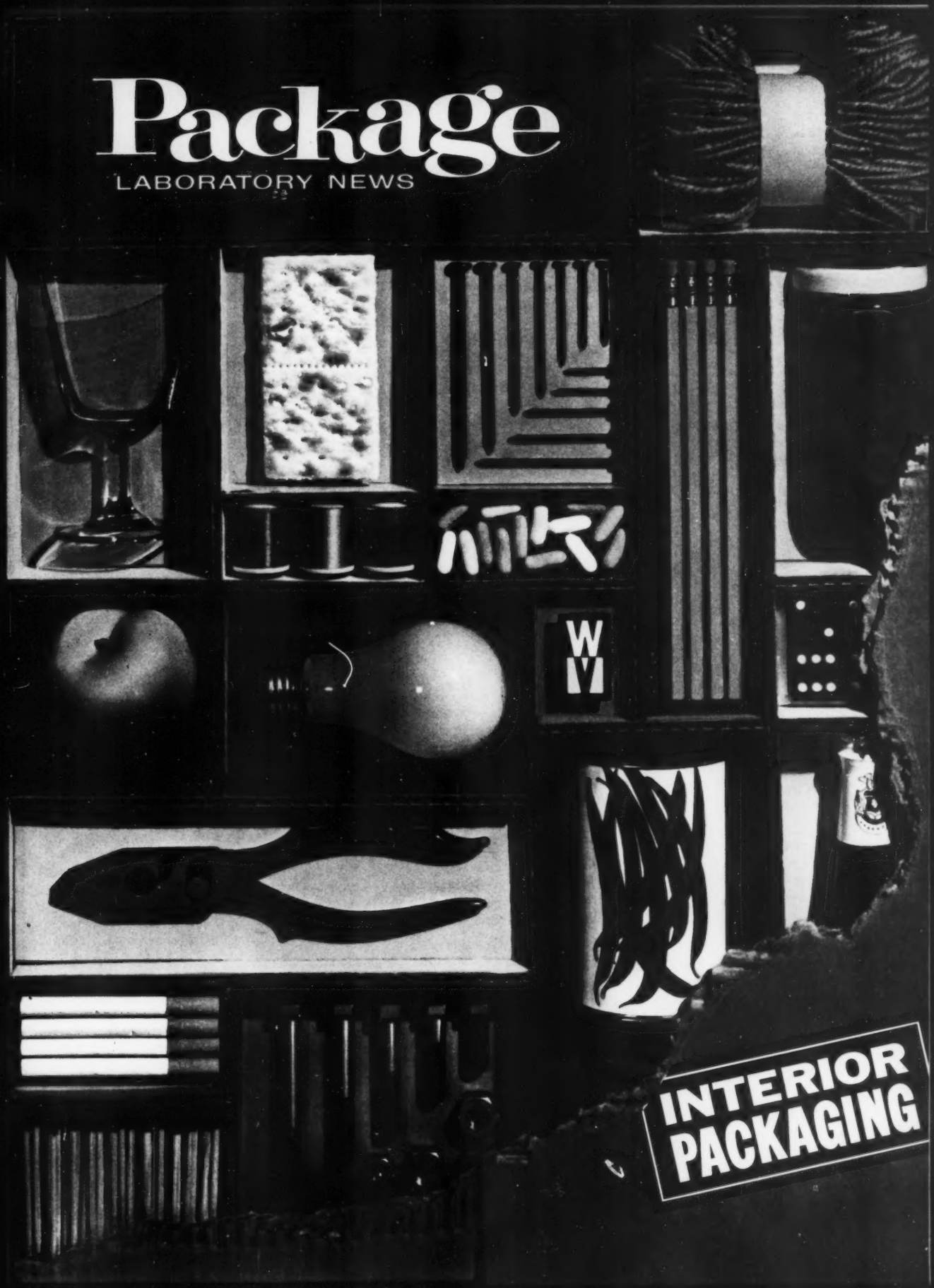
The new cylinder-type container is molded from SUPER DYLAN high-density polyethylene, a Koppers plastic. This container eliminates boxes and cotton cushioning materials, and the possibility of improper packaging. It is convenient to store, easy to ship, and it cuts mailing costs. In addition, SUPER DYLAN is heat resistant so that this container can be sterilized and reused if desired.

For more information on SUPER DYLAN high-density polyethylene, write Koppers Company, Inc., Plastics Division, Dept. MPG110, Pittsburgh 19, Pennsylvania. Koppers also makes other fine plastics for packaging: DYLAN® polyethylene, DYLENE® polystyrene, and DYLITE® expandable polystyrene.

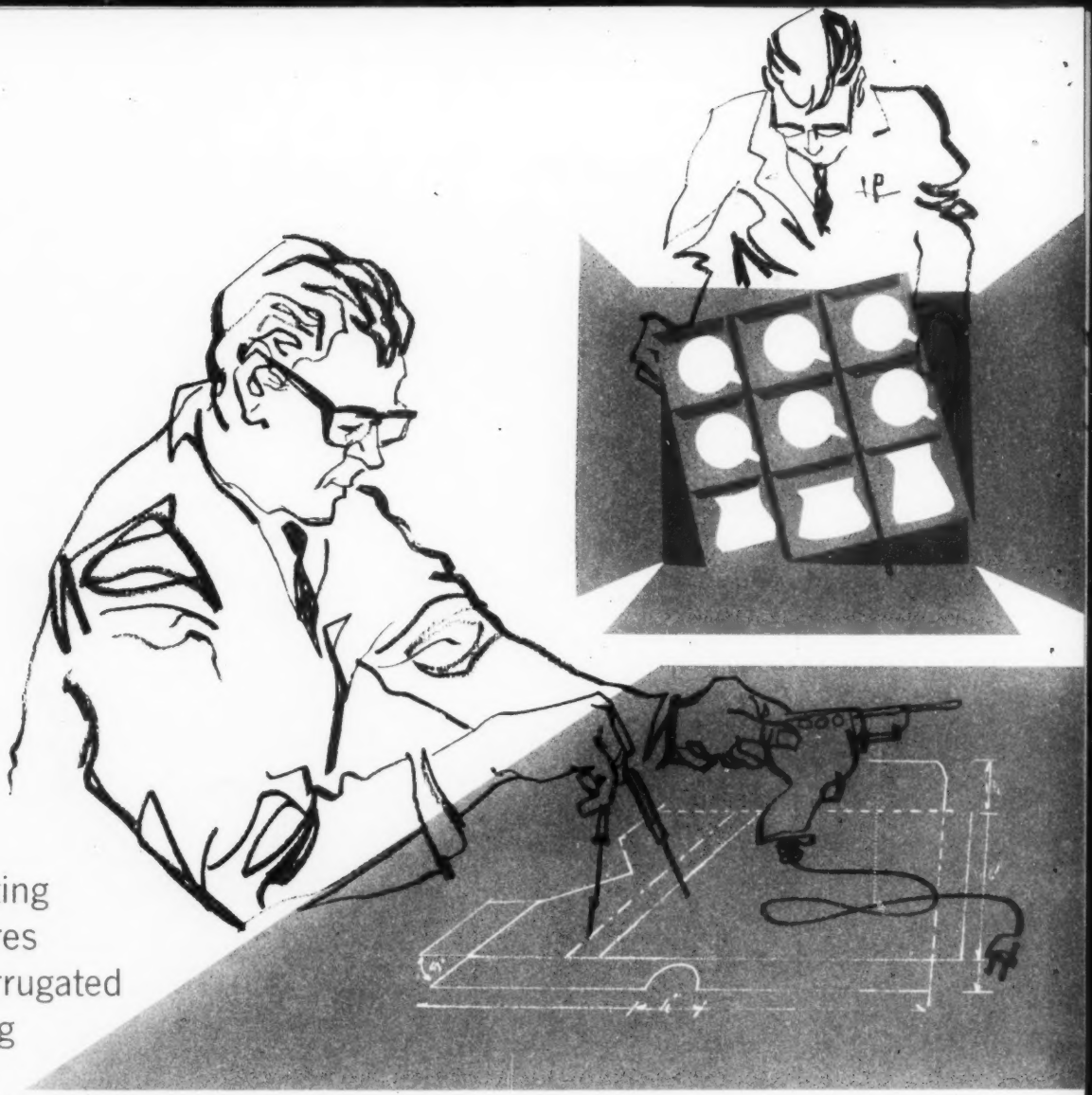
KOPPERS PLASTICS

Package

LABORATORY NEWS



INTERIOR PACKAGING



The supporting structures in a corrugated shipping box...

INTERIOR PACKAGING

the pads, partitions, liners and die-cut sheets that keep your product motionless as it moves through distribution... absorb the shock of a thousand bumps and bounces!

WHAT OTHER TYPE OF CONTAINER is as versatile as the corrugated box? A very few basic styles (regular slotted, special slotted, tube and cap, for example) can carry the endless variety of goods produced and shipped by American industry.

Interior packaging is a major tool used by H & D package engineers to make corrugated boxes so adaptable. By employing an ingenious assortment of pads, partitions, liners and sheets of corrugated board, these inventive designers custom-tailor box to product.

Creative package design begins with the selection of a basic box style in the size and shape best suited to the product's characteristics. At the same time, the engineer considers interior packaging.

Does the product need a pad or liner to cushion against impact and vibration . . . corner posts to strengthen critical areas, as in heavy appliance packaging . . . partitions to separate a number of items shipped in the same container?

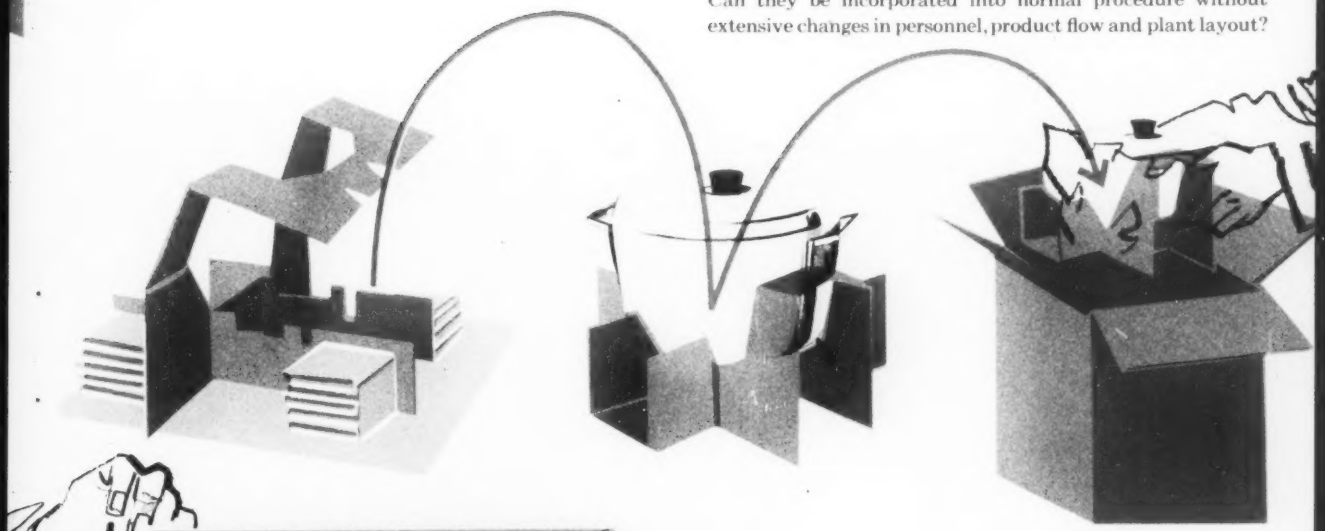
Whatever interior packaging is called for, the package engineer plans according to one cardinal rule: Keep it simple.



His objective is to minimize the amount of corrugated board used to package each product — to use as few individual pieces as possible to make the customer's total cost low, his packaging efficiency high. For example, pads or partitions can be formed by folding top and bottom flaps into the box interior. This innovation results in a simplified, space-conserving design that insures minimum board usage.

Working closely with H & D's testing laboratory, the package engineer measures product protection provided by the various interior packaging devices under consideration. He calculates carefully, making sure that the interior corrugated elements will provide a sensible margin of shipping safety — without wasteful over-packing.

But there's more to interior packaging than product protection: The engineer considers his customer's packaging operation. Will interior pieces be easy to set up and insert? Can they be incorporated into normal procedure without extensive changes in personnel, product flow and plant layout?



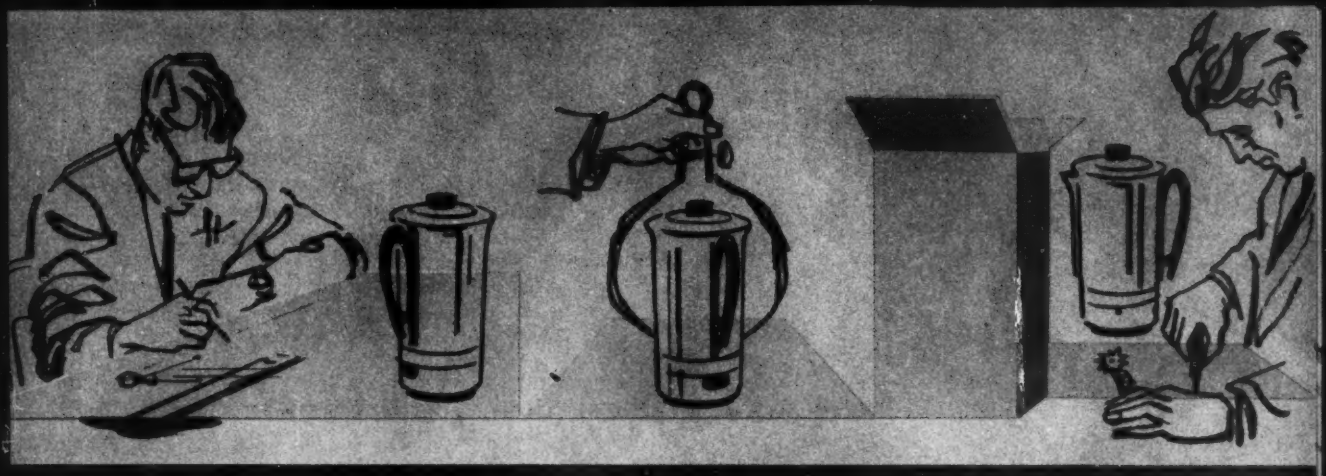


The engineer makes a determined effort to develop interior pieces that require no extra fabrication, such as stitching or gluing. Instead, he designs self-locking, die-cut pieces that set up quickly without special equipment, provide ample product protection.

Special impregnants or coatings may be applied to interior packaging for resistance against moisture or humidity, grease, dirt, abrasion, etc. The H & D package engineer chooses the most effective and economical additives. Such efforts to keep costs low are reflected in savings passed along to the customer.

In short, interior packaging is a supplement to protection provided by the box itself. Its purpose is to guard the product against the six most common forms of shipping damage: impact, vibration, pressure and displacement, abrasion, spoilage and general deterioration, and extreme or fluctuating temperatures.

Efficiency is the package engineer's criterion for interior packaging design. Each added piece of corrugated board must more than pay for itself by reducing the cost of in-transit damage.



INTERIOR PACKAGING supplements the protection provided by your corrugated shipping box.

Into every Hinde & Dauch corrugated box goes a product — plus the skill and experience of America's foremost experts in corrugated container design. Let H & D help you plan your next box for greater product protection at competitive cost.

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ed in U.S.A. on Patriotic Blue White Vellum supplemented by West Virginia Pulp and Paper. 25 x 38-50

Sounding Board

WE ASK SUPERMARKET EXECUTIVES

What are the most important suggestions you can make for changes or improvements in the packaging of food or non-food products you sell?



Ned Fleming
President
The Fleming Co.
Topeka

We believe Mrs. Consumer prefers simple package designs with adequate information, suggested uses of product, the number of servings, the number of cups and other information which will be helpful to her, keeping in mind particularly the new generation of housewives. Some packages might well carry helpful instructions to the consumer for easy opening.

We believe that supermarket operators want the following features in the package:

1. Adequate spot for pricing on the end of the package in order that all price marking can be done while the merchandise is still in the case.

2. Shipping cases marked to indicate the correct side to cut so that the price-marking area will be exposed. Also such marking for correct opening for display.

3. Proper packing of packages in the case to make for the easiest possible price marking.

We believe both supermarket operators and consumers resent deceptive packaging, redesigned simply to get more shelf space. Other suggestions:

1. When the product package is changed, a change in the shipping-case design would be helpful to assure that older stock will be moved first from the warehouse and the supermarket back rooms.

2. Longer shipping cases rather than square cases make warehouse handling easier and reduce damage.

3. Deal-pack cases should be plainly and emphatically marked as to contents and the deal.

A. C. Edens, *Vice President, Sales and Merchandising, Colonial Stores, Inc., Atlanta:* I believe a memo which I quote below, received from one of our non-foods merchandisers, brings out practical suggestions:

"The most important thing in packaging from a supermarket angle would be, first, and ahead of consumer packaging, standardizing shipping cases as small as possible with as small quantity as possible. Frequently, the fact that a manufacturer may have no standard package and a case pack too large would preclude our handling an otherwise desirable item.

"As to consumer packages, it is extremely important that price be designated very prominently (that is, all pre-priced goods) so that checkers will not confuse size or other identification with the price. A recent example: For a bra package, a checker was observed ringing up 34 cents instead of 81 because the size was marked "34C" in a more prominent position than the price. Needless to say, we are discontinuing this item until the manufacturer can provide a suitable package.

"It is always desirable to have on the consumer package as much hard sell as possible and, if not pre-priced, to have a circle suitable for pricing."

Daran Zimmerman, *Sales Manager, Grocery Operations, Thorofare Markets, Inc., Pittsburgh:* Packages have to be easily marked and there must be adequate space on the package so that prices can be apparent to the consumer. Easy marking of the packages is important because of the vast amount of products that must be quickly marked and put out on the shelves to meet customer demands.

Packages should lend themselves to good stacking at shelf level. Changes in the label and in design have to be made carefully so as not to lose customer identity of the product, which is very important.

The package contents have to be in line with the consumer needs: Does the packaging lend itself to refrigeration? Can it be handled well by the consumer? Many of the manufacturers of liquid-detergent containers have added special accessories or caps, so that the quantity desired can be measured quickly.

In canned goods, does the can contain an amount that will be consumed in one meal? Is it tailored to the consumer's need? Is it a can which would be enough for a one-family meal—for people who have a variety of tastes—the 8-oz. can, for example, or a can tailored for a household of two or three people? In the supermarket business, because our mark-up is low, we must attain high turnover; thus our packages and cans must be appealing to our customers, must be exactly what they want. For in our business, more so than in any other, the customer is always right.

Package interest has grown greatly in canned drinks

in the throw-away container which leads to an end road in the sales of bottled soft drinks, which is good. It is good because of the numerous quantity of bottles that we handle. The milk carton is an example of a container which helped cut down the amount of bottle handling which we had to do, but which has led to other package problems—some cartons leak, in others the wax has come off into the milk—perhaps the plastic container recently introduced will solve this. However, any new package has to be in line with consumer and retailer needs.

The use of a heavier type of cellophane has proved helpful to package using industries. This is especially true where sales are dependent upon product visibility. The stronger the package, the better. Films are good in that they maintain freshness, the amount of damage is cut down and valuable time is saved.

The important consideration in any type of package is that the product must be properly presented to the consumer. The screw-off-type lids are a real improvement in packaging. The uniqueness in preserving pickles is always of interest. An example of a good job being done with one pickle item is the squat half-gallon jar—the purchasers' reaction is seen in sales that have been good because of the container and not especially because of the product. Decorator tumblers offer incentive to the consumer to purchase. If you have a product that sells itself, then you must be careful about any radical changes in color, shape or size. Changes must take place gradually, especially is this true to begin with; otherwise, the manufacturer will have to spend much money to establish product image, product identity and consumer acceptance.



Clifford Haskell
Vice President
Alpha Beta Food Markets, Inc.
La Habra, Calif.

In the food business, we have seen a tremendous growth of improvement in the packaging of practically all items sold in a retail food store and, in each case, the new packaging devices have shown increase in sales, ease of handling and ease of price marking. For this, the groceryman is thankful for the efforts extended by manufacturers and processors. However, I am sure I am speaking on behalf of all food-store people when I say that there is one group of items that is obsolete in its packaging and has caused a considerable number of problems in the stores.

The group of items that I am talking about is liquid bleach in glass bottles. As long as bleach has been sold in retail stores, the packaging has never changed. Oh, yes, there have been, perhaps, new bottle or label designs, but the master glass container and the screw-cap top are still in their original states.

Being packaged in glass itself creates problems of breakage, not only in the stores, but in the customer's home. Why can't this packaging of bleach be accomplished in a container other than glass?

Maybe it is asking too much to have bleach packaged in a container other than glass, but I feel sure that it is not asking too much to have a sealer on the bottle that can do a better job than the screw cap. The screw cap becomes loose in transit or is not tightened at the time of bottling and the bleach spills out in the customer's shopping cart or in her car on the way home. In our company, our second highest accident-insurance claims are from bleach bottle caps.

Today, with all modern materials for containers, we in the retail food business believe that we have the right to ask for better packaging of liquid bleach.



Gardner H. Stern, Jr.
Director of Operations
Hillman's, Inc.
Chicago

A significant productivity improvement is being made where merchandise can be effectively displayed without completely removing it from its shipping container. Commonly known as "tray stock" or " tray pack,"* this technique has been given considerable attention at Hillman's recently, as well as in several other food chains. We feel it has great potential and hope that our suppliers will increasingly cooperate in designing shipping containers for tray stocking.

This requires creation of a uniform $1\frac{1}{4}$-in. lip, with clearly marked cutting guide, and clear and comprehensive descriptions imprinted on this lip. Also, it requires label redesign, so that descriptive matter and/or parts of the vignette are not hidden by the lip.

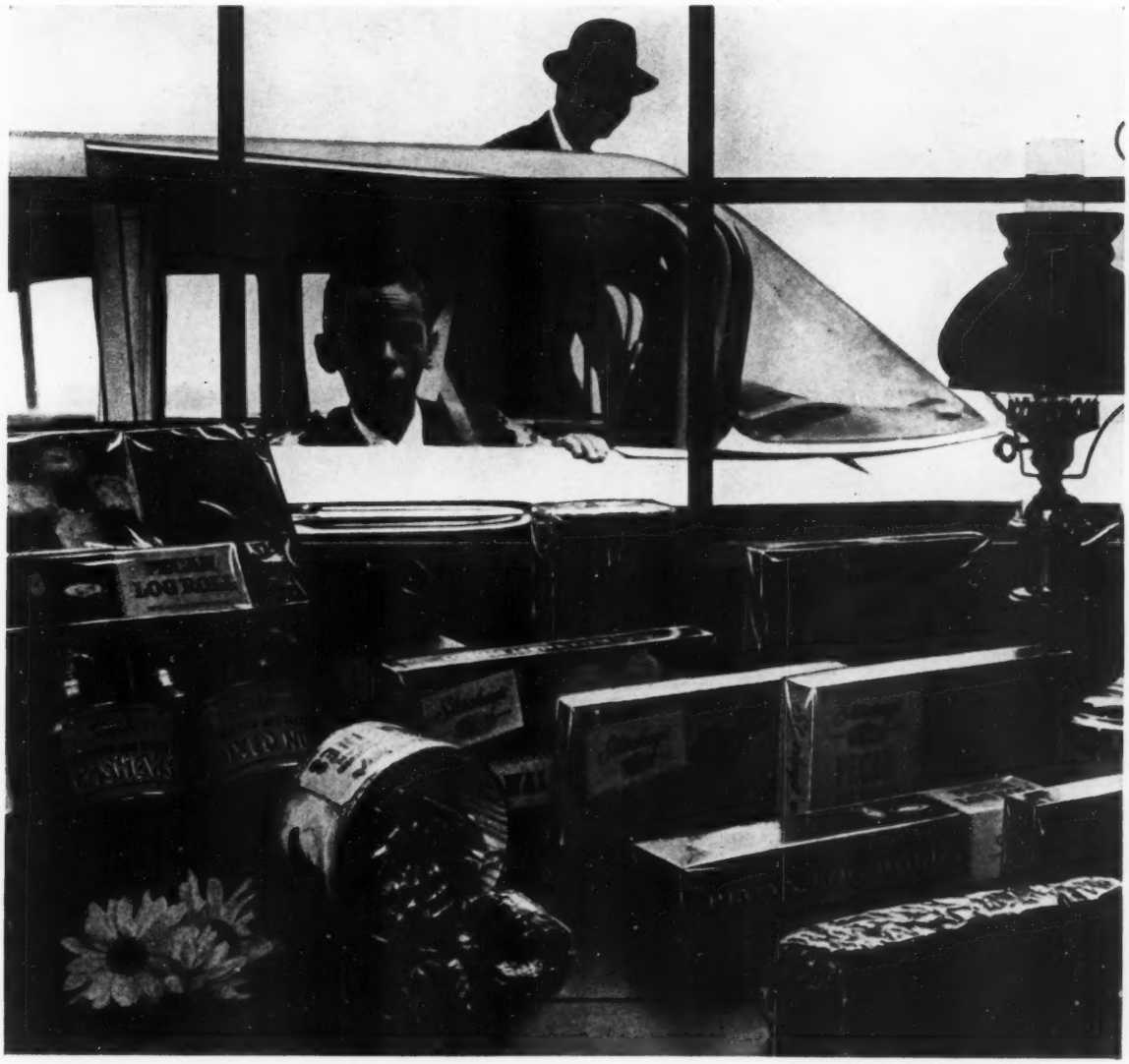
Manufacturers of cake mixes and other items which are packaged in containers prone to cutter damage should reconsider the use of tear tapes so that these items can also be tray stocked.

The merchandising and operational benefits of tray stocking are important to the manufacturer as well as the retailer. The retailer will get reduced cost of stocking shelves, reduced safety hazard of falling cans, better re-ordering, easier price changes and rotation of stock, and improvements in the appearance of his grocery department because of neater, clearer, delineation of product and a well-stocked look. In addition to some of these, the manufacturer gets a chance to develop effective point-of-purchase promotional material to be imprinted on the tray lip.

Harold Lewis, *Vice President, Lewis Bros., Inc., Portland, Ore.:* Do not use the whole surface of the package for printing. Advertising can be overdone at the expense of the eye appeal. People want to see a substantial part of the contents and will buy a product if they are pleased with it.

It is, therefore, preferable to use a plain film without printing and to attach the printed label solidly afterwards. Sales of franks in such (1 and 2 lb.) packages increased 300% against last year.

* See "The Trend to Trays," MODERN PACKAGING, Sept., 1960, p. 101.



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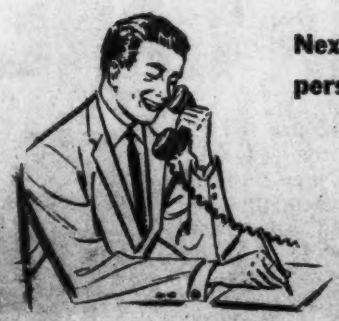


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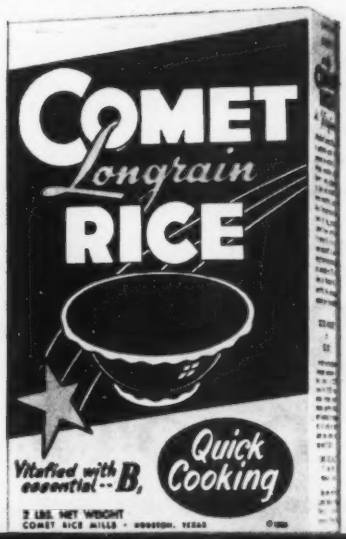
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THE FASTEST SELLING FOODS ARE IN THE FRESHEST LOOKING PACKAGES







"What the eye *sees* faster *sells* faster" is an old axiom in package goods merchandising—and no one is more keenly aware of it than brand leaders in the field! To assure maximum shelf appeal, Magnolia Carton uses Calcofluor White-treated paperboard for the Comet Rice and Lipton Tea packages. With this famous Cyanamid brightener, whites are *whiter*, colors *brighter*, type and illustrations stand out sharp and clear. Stronger package design adds strength to favorable brand image, adds speed to eye-and-buy appeal. To help move more merchandise into consumer hands—specify Calcofluor White in your packaging board! American Cyanamid Company / Dyes Department / Bound Brook, N. J.

• COMET RICE package: Bleached Manila-Lined Newsboard. • LIPTON TEA package: White Patent-Coated Newsback. • Board by Fleming & Sons, Inc., Dallas, Texas. Packages by Magnolia Carton Division of Fleming and Sons, Incorporated, Houston, Texas.

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Fruit of the Loom uses Riegel Foldcote for its Men's Stretch Socks carton... printed by offset in 5 colors, press varnished and die cut by Lassiter Corp., Charlotte, N C.



World Report

Abstracts from foreign packaging magazines

ENGLAND

Freeze drying demands new packaging concept

The revolutionary new process of accelerated freeze drying (AFD)—expected to be one of the next important advances in the preservation of foods—calls for new packaging techniques which are discussed in *Sales Appeal & Packaging Technology* (England). Producers of AFD foods will be faced with a problem of how to package for the required storage life, the article states, with little or no comparison with existing products. It will be necessary to initiate research into food properties and packaging requirements.

Until recently, the main emphasis was on the packaging of these foods for military use, with packaging specifications more elaborate than anything applicable to commercial packaging. During the past year, interest has shifted to packaging more suitable for commercial purposes. The principal causes of deterioration of AFD food products, it is stated, are: (1) moisture absorption, (2) oxidation, (3) flavor contamination and (4) mechanical change. Dealing with each of these in turn, the authors of the article point to general requirements for a package with a shelf life of one year. For most tests by the Ministry of Foods Research Establishment at Aberdeen, storage conditions of 25 deg. C and 75% relative humidity were maintained in order to simulate temperate climate conditions.*

CANADA

Motor oil in linear polyethylene bottles

First use of plastic bottles for motor oil in Canada is reported in *Canadian Packaging*. Imperial Oil Co. is using 35-oz., blow-molded linear polyethylene bottles for Esso oil for outboard motors, chain saws and power mowers, and the company points out the application may be the forerunner of widespread use of plastic for oil products in small quantities. The bottles are four-color printed by the hot-transfer method (Therimage) and have a red polystyrene cap with pulp and vinyl liner. Price, says Imperial, is "just slightly higher" than that of conventional oil packaging. By incorporating two flanges at the top and bottom of the container design, the bottles retain their rigidity when stacked, the report states. And when tossed in the bottom of a boat, the bottle will roll on the flanges, not its side.*

DENMARK

Danish packaging guide

Announcement has been made of the publication of *Emballage Arbogen* (Danish Packaging Guide, Copenhagen) by the Danish Packaging Institute. The 240-page book covers almost every aspect of packaging: merchandising, production, material and equipment—plus a complete catalogue of Danish packaging machinery and supplies.*

THE NETHERLANDS

The amber milk bottle

Adopted for its effectiveness in screening out ultra-violet rays, the amber milk bottle, apparently, has posed another problem, according to comments in *Verpakking* (The Netherlands). In a column giving views about developments in packaging from the woman's point of view, it is stated that the amber bottle recently introduced into Holland for the packaging of milk has been a failure and all experiments by dairies have been dropped. "With the increase of ambient temperature due to the changing seasons," the article states, "it became apparent that the amber-colored bottles absorbed more heat than the conventional bottle. An investigation by the Amsterdam Bureau for the control of the quality of foodstuffs shows that after exposing milk in glass bottles to the radiation of the sun for a 2-hr. period, the temperature of the milk in amber-colored bottles was 7 deg. C. higher than in clear glass containers."*

JAPAN

Foodstuffs packaging

The major portion of a recent issue of *New Packaging* (Japan) related to the packaging of foods. The lead article, devoted to a study of aims and problems concerned, was written by S. Toriyama, director of the Aichi Institute of Food Technology. W. Sanekawa, department of health, contributed a discussion of hygienic packaging and the precautions to be observed in food factories. Canning of food products and of beer was discussed in an article describing the Toyo-Seikan Co. A new type of processed paper to cut the cost of ice-cream packaging was also described. Another article appearing in the issue dealt with consumer appraisal of the vacuum packaging of boiled beans.*

Pottery packs for export

A summary of a symposium recently held on the packaging of potteryware in Japan for export was contained in a nine-page report in the same issue. Discussions were contributed by representatives from various technical centers, carton makers, transport bodies and ceramic producers.*

AUSTRALIA

Ban on thin plastic bags

A complete ban of all thin plastics bags has been recommended to health authorities by the Plastics Institute of Australia, according to *Australian Packaging* (Australia). Concerned about dangers inherent to the misuse of plastics bags of certain gauges, plastics-film manufacturers and converters have unanimously agreed to recommend a ban on films below 0.001 in. in thickness, after examination had shown that accidents which have occurred were attributable to the misuse of film below that thickness.*

SPAIN

Spanish-speaking packagers exchange ideas

Discussion got under way in Barcelona during the summer among representatives of Spanish-speaking countries for the purpose of encouraging study and application of technical information to mutual packaging problems. According to *Informacion de Embalaje* (Spain), the initiation of these activities may figure in the formation of separate packaging institutes in the most interested countries: Argentina, Chile, Brazil, Peru, Colombia, Venezuela, Uruguay, Paraguay, Costa Rica and Mexico. Details of a plan of action were outlined at a meeting in Madrid during July. The program, apparently, is designed to open up new possibilities for commercial interchange among these countries, involving packaging materials, machines, methods and procedures.*

FRANCE

Flexing cap liners

A new polyethylene cap liner designed to obviate loosening of the closure during transit is described in *Emballages* (France). The liner may be fitted to all types of screw

*For additional information, write: World Report Editor, MODERN PACKAGING, 575 Madison Ave., New York 22.

caps, it is stated, whether metal or plastic. The particular feature is a dome-like shape. The inner portion of the dome bears four tilted projections whose function is to lock the cap immovably to the liner and the glass finish.*

Prototype for European stamp of quality

In connection with the movement in Europe for packaging to meet standard tests and specifications for shipment in international commerce that can be marked with a European stamp of approval, *Techniques d'emballages* (France) calls attention to agreements on standards established between France and Belgium. Originally, the article states, the stamp of approval for shipments between these two countries was based on tests conducted in the laboratories of the railroads. It was due to interest of users in packages whose quality had been officially recognized by the railroads that led to the formation of the Belgian Packaging Institute and the General Laboratory for Packaging in France. Since then, cooperation between the two groups has been continuous to establish standards marked by a stamp of quality, which receives full approval of the railroads. This endeavor is pointed out as the first step toward agreements that eventually can be established between all laboratories and institutes of the participating countries in the interests of packaging to reduce product damage.*

Compression resistance of corrugated flutes

Findings of a study on the behavior of kraft paper in various types of flutes before and after corrugation when subjected to corrugated-container compression tests are reported in *Techniques d'Emballages* (France). Results of the research, conducted by J. R. Mariaux, French General Laboratory for Packaging, and R. M. Mansuille, engineer, are presented in a complete and comprehensive table summarizing the study which accompanies the article.*

GERMANY

Unified transport and packaging regulations

Recognizing free exchange of goods between participating countries as a main provision for the Common Market, J. P. A. Hoffman brings up the same subject in *Die Neue Verpackung* (Germany) as is discussed in *Techniques d'Emballage* (France), namely unification of transport and packaging regulations. This yet-distant aim can be reached only if transport and packaging regulations would be coordinated on a beyond-national level, he says. Until now the individual countries have not even succeeded in coordinating satisfactorily the transport regulations with the fast development of packaging materials and methods. Partial solutions have been obtained by various international organizations. Final resolutions, however, could be taken only by an international committee of carriers as well as by the cooperation of national packaging institutes.*

New autoclaving systems

In Federal Germany today high-pressure autoclaves are used almost exclusively for the sterilization of canned foods, but many companies, according to *Die Neue Verpackung* (Germany) are now considering to supersede them with turret autoclaves or straight-through, trough-type autoclaves for products in strong demand. The trend indicates a need, apparently, for efficiency of higher production capacity.*

Electronic check weigher

A new type of electronic check weigher is illustrated and described in *Verpackungs Rundschau* (Germany). The equipment is designed on a straight-line flow principle and is arranged to allow for pre-set plus or minus tolerances. Normally, the filled but unsealed packages will be fed into the machine, which will accept all those within given limits. All those deviating too greatly will be ejected, while the correct-weight items pass onwards to the sealing station. The machine is designed to handle paperboard cartons or any type of free-standing bag packs.*

ENGLAND

Marking system for 'pernicious' additives

Repulping problems caused by growing use of metal foils and synthetic materials in conjunction with paper is the subject of an editorial in *Packaging Review* (England). In connection with a common method of marking being sought by the British Utilization Council to facilitate the identification of multiwall sacks which contain wet-strength resins and other "pernicious contraries," attention is called to a marking system adopted by H. J. Heinz Co., Ltd. Twelve of this company's main suppliers have asked their multiwall sack suppliers to print a broad red band around the front and end panels of sacks which incorporate laminates and coatings, such as asphalt, plastics, metal foils and wet-strength agents. Segregation of the plain sacks from the treated ones, according to the article, can raise their recovery value by as much as £10 a ton.

Though barrier materials and synthetic additives have greatly widened the applications of multiwall sacks, the editorial points out, they have also created a new problem for the paper industry. Reclaimed waste paper saves the U.K. £43,500,000 a year in terms of imported pulp. Growing use of pernicious contraries has complicated the recovery system and could upset the economy. It only takes a very small amount of foreign matter in the beater, it is stated, to ruin a ton of paper.

Symbols identifying treated multiwall sacks would greatly facilitate the segregation problem, it is suggested.*

Unilever detergent in foil carton

A new detergent washing powder, Wirl, is being marketed by Unilever in a foil-laminated carton, according to *Packaging News* (England), "introducing a fresh approach to detergent packaging in Britain, although it has many parallels in the United States." This is a further example of the growing use of foil-laminated cartons and boxes to package keenly priced consumer goods for which, until recently, they were considered too costly a medium, the article states.*

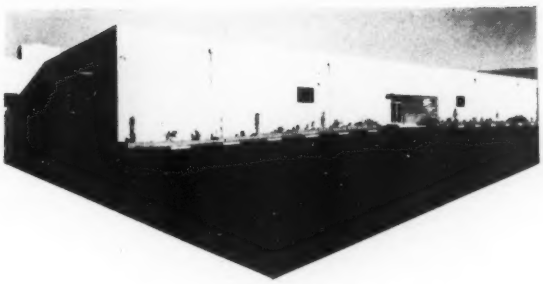
Complete meals from vending machines

Ten different complete meals packaged in four-color-printed waxed cartons are being sold from refrigerated vending machines on caravans and at camping sites in England as part of a five-year plan in which the activity is to be expanded to a number of holiday centers and industrial districts. The food is not frozen or processed in any other way, except for potato slices which are lightly cooked, according to a report in *Packaging News* (England). Later it is intended to reach into London's West End, where it will serve thousands of that city's flat dwellers.*

Counting at speeds to 12,000 per minute

A sensitive promixity-detecting device that energizes a relay and triggers a mechanical or electro-mechanical response is described in *Packaging News* (England). The proximiter can be used for counting up to 1,000 a minute with an electro-mechanical counter or with a pulse-operated batch counter at speeds to 12,000 per minute, the article states. It may trigger, through the relay, any other operation necessary to the handling, sealing, labeling, etc., of the items detected. It can also control levels in tanks or hoppers containing liquids or solids, control the interface between miscible liquids, sense the presence of small metallic markers on paper and other materials handled in sheet or web form, or monitor the state of valve chambers.*

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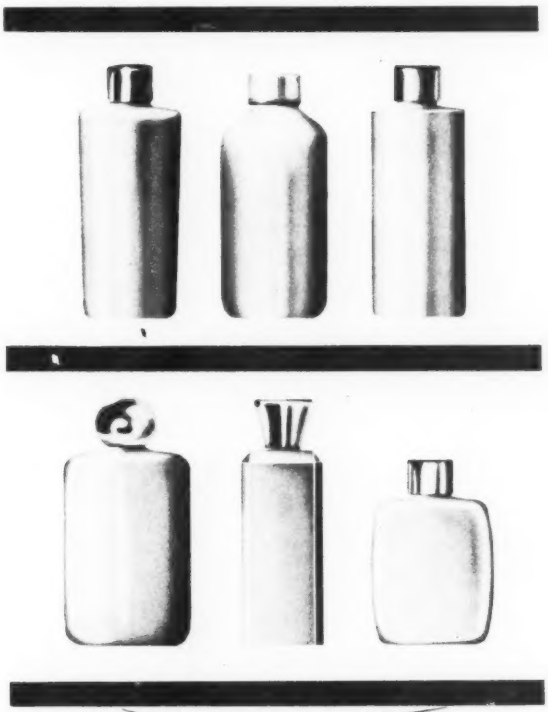
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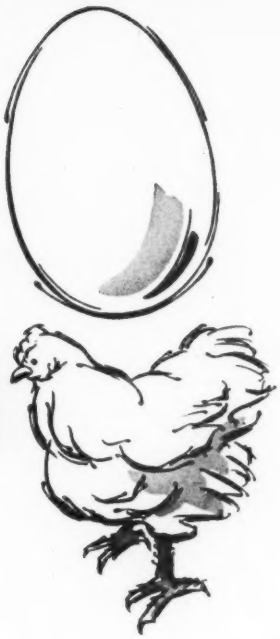
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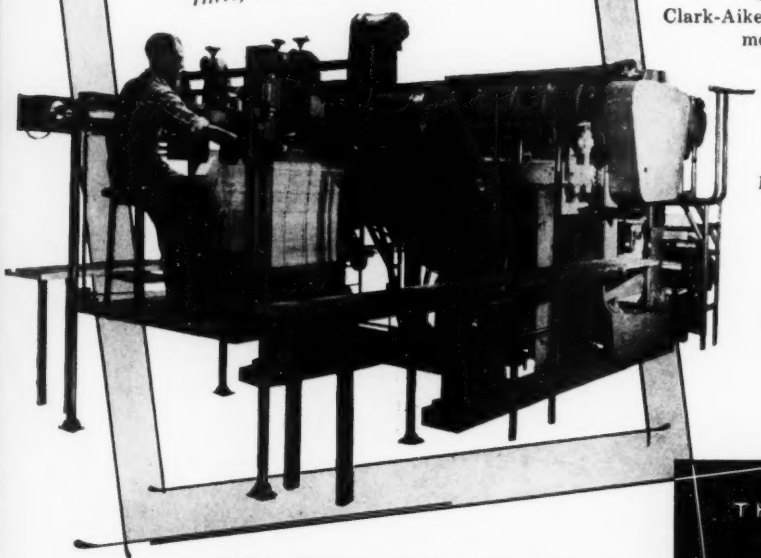
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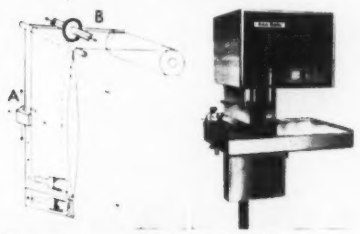
In Canada: Gordon W. Keates, 133 Flora Dr., Scarborough, Ont.

Packaging Notes

"Rack-packaging" impulse buying items completely in one operation is now possible with this latest model, illustrated. *Packager-Sealer* which forms package around a product from open-end polyethylene film now comes equipped with two new accessories.

Using film with heat-sealed header, machine forms and seals package—while new *Register-Perforator* (A) punches $\frac{1}{4}$" holes in header at desired intervals, and new *Skip-Slit Perforator* (B) perforates along width of bag (top or bottom) for zip-off opening.

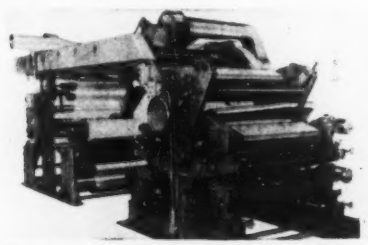
Machine with attachments saves one-half the cost of preformed bags, saves cost of grommets and grommeting operations, and reduces inventory of materials. Accessories also available separately.



(Photo courtesy See-Safe Machine Co.)

A compact, single-drum flexographic press, designed to meet the packaging industry's demands for close register color printing on narrow web widths of polyethylene, has recently been introduced. Reportedly, it is useful for shorter runs, incorporates principal features of larger flexographic presses. Cost is said to be comparable to that of many stack-type presses.

Standard equipment includes a 30" diameter single-impression cylinder with four color stations; new positive-locking device for color and plate cylinder frames. This device eliminates vibration, assures accurate adjustment and printing quality.



(Photo courtesy Hudson Sharp Machine Co.)

Polyethylene handles on 25-lb. multiwall bags of granulated salt are being received favorably by consumers, according to a recent announcement. Injection-molded, the sturdy handles are simply sewn under the top tape during the ending operation. Bags need no special handling, as carriers lie back flat during filling, stacking, palletizing and shipping.

U.S.I.-International Constructing Offices and Laboratory in Baar, Switzerland

Will Help European Polyethylene Processors Expand Market, Improve Products

A new customer service laboratory and office building is currently being constructed at Sihlbruggstrasse, Baar, Switzerland, by U. S. Industrial Chemicals Company-International—officially incorporated October, 1959, as Sales and Development Company of National Distillers and Chemical Corporation (International) S.A. Temporary headquarters are at Kirchenstrasse 13, Zug, Switzerland. The new building in Baar, Canton of Zug, is scheduled to be ready for occupancy about July, 1961.



A model of the new laboratory and office being built by U.S.I.-International in Baar. The laboratory will be used to demonstrate best techniques for processing polyethylene.

Serves PETROTHENE Customers Abroad

The new facility will support the efforts of U.S.I.-International's representatives, through whom sales of PETROTHENE polyethylene resins will continue to be made. It will help them provide their customers with the close technical assistance which the polyethylene market demands. Experienced personnel will conduct research and evaluation studies to help improve products and develop new consumer markets. The United Kingdom, as well as European countries, will be served.

Well-Equipped Laboratory

The laboratory will be fully equipped with processing and test equipment designed to meet European standards and operating conditions. It will be used to demonstrate the best techniques for processing polyethylene into finished articles.

Polyethylene Used for Insulators in Nuclear Weapons Research

Two large polyethlene insulators, 18½ inches in diameter, have been made for use with a unique electrical switch in the discharge of heavy current loads from large condenser banks. Insulators and switch are reported to be part of research equipment used by nuclear physicists in the simulation and study of various aspects of nuclear weapons systems.

Polyethylene was chosen for its good insulating qualities, it is reported. Each insulator is said to be capable of withstanding voltages in the neighborhood of 100 kilovolts. The insulators were carefully milled to ensure design compatibility with the special two-million-ampere switch.



Milling polyethylene insulator for use with unique electrical switch in nuclear weapons research. (Photo courtesy Boeing Airplane Co.)

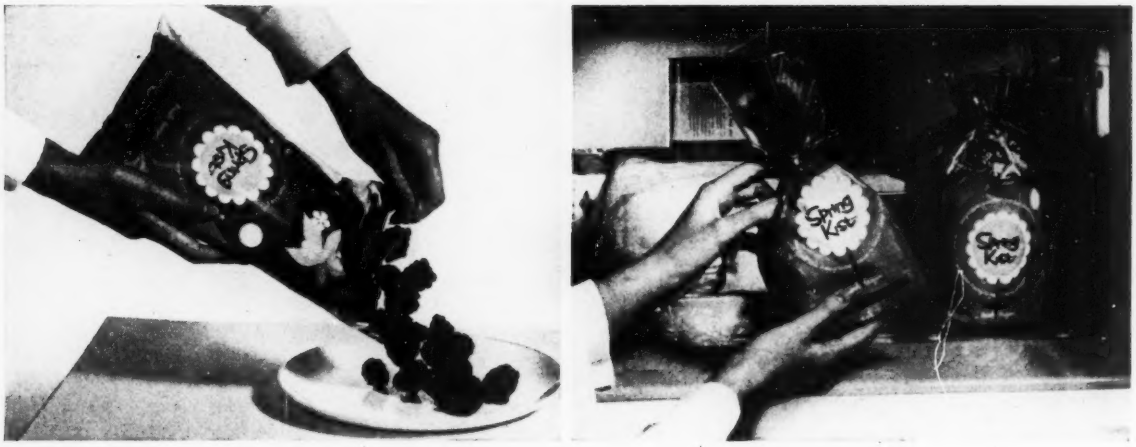
How to Build a Boat Shelter

To protect your boat against winter winds and snow, store it under polyethylene film. Lightweight, easy to handle, and inexpensive, it can be supported on a framework that's lighter and less expensive than the kind required by canvas coverings, according to the Canadian owner of a 37 ft. cruiser. He recommends building framework of bolted 2" x 2" lumber around the craft, covering it with 4 mil. black polyethylene, leaving a little slack. He makes vents in the roof, allows two feet between cover and ground.

U.S.I. Names New Vice-President

Paul J. La Marche has been made Vice-President of Production for U.S. Industrial Chemicals Co., Division of National Distillers and Chemical Corporation, it was announced by Robert E. Hulse, division General Manager and Executive Vice-President of the corporation.

Mr. La Marche joined the U.S.I. organization in 1949. Shortly afterward he became Manager of Sodium Sales. From 1951 to 1958 he was manager of the company's Ashtabula, Ohio, plants. He became Director of Production in October, 1958. Mr. La Marche is a graduate of Case Institute of Technology.



Spring Kist's 4-color package shows consumer appeal of individually frozen food in large, polyethylene pouches—in the supermarket . . . when it's poured . . . when it's stored.

SELL MORE WITH "POUR AND STORE" in economical Polyethylene pouches

New 1 lb. to 3 lb. polyethylene packages of individually frozen *pourable* fruit and vegetables are winning acceptance.

Thrifty housewives like them because they can buy for less . . . pour out what they need for a serving . . . store the remainder in the freezer. There's no frozen mass to thaw, either. Retailers, moreover, report this development represents a new market . . . has little effect on sales of conventional small-sized containers of solid-frozen food. And the economy appeals to institutional buyers and to locker plant operators serving cost-conscious, bulk-buying consumers.

To get your share of this rapidly growing market, you need polyethylene bags that won't become brittle at freezer temperatures and break when handled hurriedly . . . that have sparkling gloss and clarity yet can be fully color-printed to minimize bleaching of green vegetables under neon lights of supermarket freezers . . . that don't form condensation clouds when properly packaged . . . that keep food fresh and appealing. *You need bags made from U.S.I.'s* PETROTHENE® *polyethylene resins.*

Here, for example, is the experience of Spring Kist Sales, Inc., Salt Lake City, Utah, packager of free-flowing, frozen fruits and vegetables: Spring Kist eliminated a serious breakage problem by adopting 3-mil polyethylene bags made by Texas Plastics, Inc., from PETROTHENE resin. Since making the switch over a year ago, the company has had excellent results – bag breakage is nil and sales curves have risen sharply.

Ask your polyethylene bag supplier to investigate the advantages of film made of U.S.I. PETROTHENE resins in producing pouches that add appeal to frozen fruits and vegetables . . . yet withstand handling at sub-zero temperatures . . . and cost less than other packages. U.S.I.'s experienced technical service engineers will be glad to work with him in producing bags that deliver all of polyethylene's potential. For more information, write to:

U.S.I. INDUSTRIAL CHEMICALS CO.
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- **PATENTED BELLOWS VALVE** — Positive operation—opens on back stroke to admit air into pumping chamber; closes on forward stroke, for efficient pumping action.

..and for added ammunition..these COMPANION PACKAGES by R. C.

For refill, or for related use, R. C. Cans offer many extra features: paraffin coating, special moisture proof laminations, and a wide variety of tops (with or without identations for sifting).



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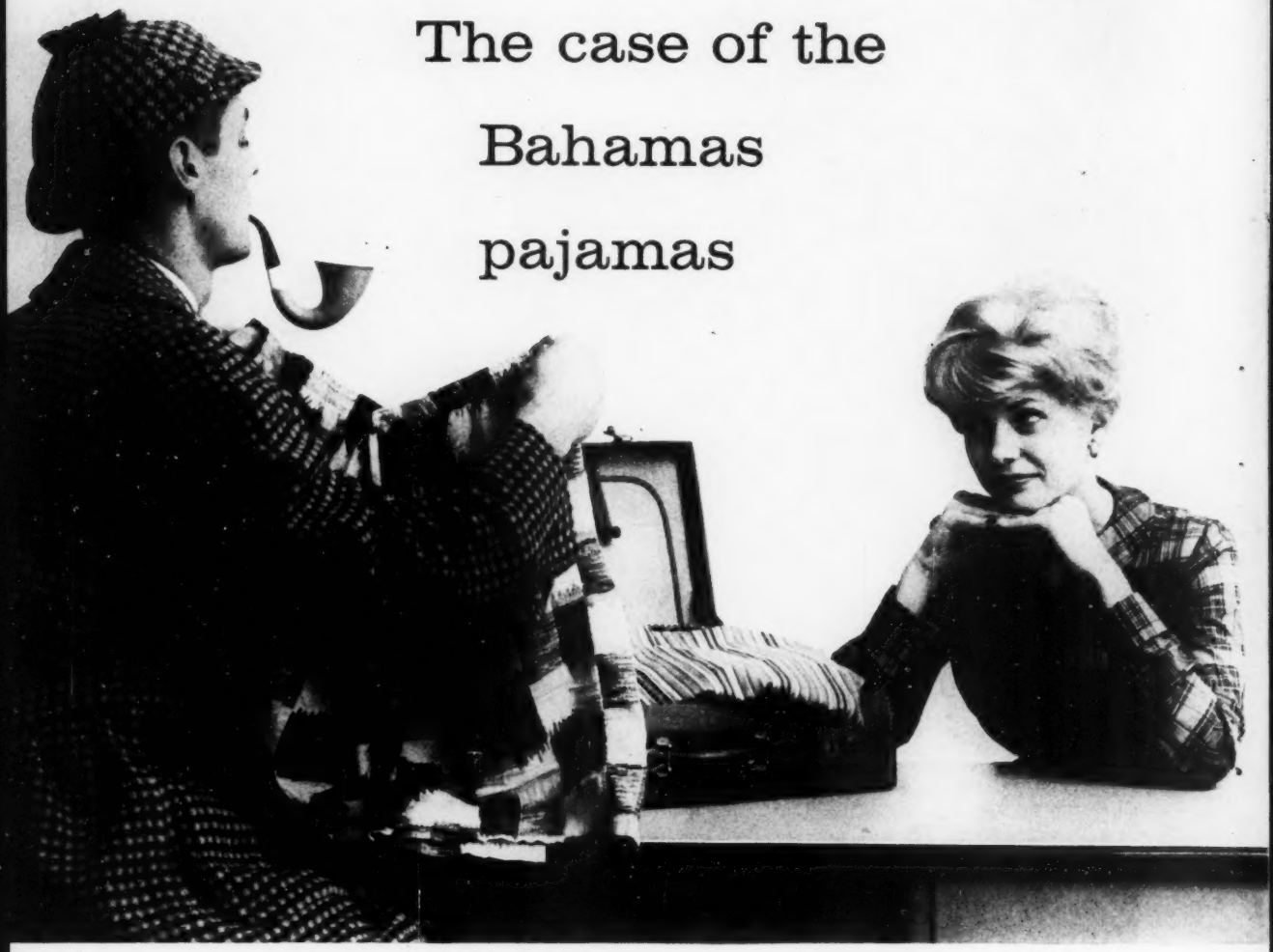
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The case of the Bahamas pajamas



MISS WATSON: Fearless, where did you get those crazy threads?

FEARLESS FULLER: Well, you've heard of Bermuda shorts haven't you, Miss Watson?

MISS WATSON: Yes.

FEARLESS FULLER: Well, these knee-length nighties are my Bahamas pajamas.

MISS WATSON: And what, may I ask, are you doing with Bahamas pajamas?

FEARLESS FULLER: I'm packing them for a trip. I'm going to visit our new Fuller Adhesives International Division in Nassau, Bahamas.

MISS WATSON: What's the matter? Are the natives getting restless?

FEARLESS FULLER: Very funny, Miss Watson. But I'll have you know we have an efficient adhesives operation going on down there.

MISS WATSON: My, who'd have thought those islands would use so much glue that they'd need their own Fuller plant.

FEARLESS FULLER: The islanders don't really need their own plant. Nassau just happens to be an ideal location from which Fuller can serve the needs of our South American customers. We supply overseas plants of many United States firms from there, too.

MISS WATSON: Fuller adhesives hold the world together.

FEARLESS FULLER: That's right. And soon I plan to visit our Fuller plant in Winnipeg. We serve the adhesive needs of our Canadian friends from there.

MISS WATSON: Well, I suppose, just like the Mounties always find their man, Fuller always finds the right adhesive.

FEARLESS FULLER: Spoken like a true friend, Miss Watson. The Fuller man always knows the solution to adhesive problems.

Your Fuller man is ready with the correct solutions on any adhesive problems for you, too. Contact your nearby plant.

H. B. Fuller Co.

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puts "turnover"

in packaging



Getting the jump on competitive products is often just a question of presenting your product in the right package. If moving merchandise is your problem, we'll be glad to go to work with you on the solution. In addition to more than 30 years of flexible packaging experience, Oneida offers the skills of a team of top designers, and the fine printing qualities of the latest 6-color flexographic, rotogravure and letterpress printing equipment. Write for complete information no obligation.

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will surround it with **SELL!**





Bend your thumb and the top slides open . . . extend your thumb and the top closes. It's an open and shut case that the new "Slide-Top" case—roto-printed by Marathon on special solid bleached paperboard—helps promote cigarette sales. Here's a good rule of thumb to remember: for packaging that gives your product a promotional plus, call on the experience and resources of your Man from Marathon. Marathon, a Division of American Can Company, Menasha, Wisconsin. In Canada: Marathon Packages Limited, 100 Sterling Road, Toronto 3.

For packaging . . . and ideas . . .

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Editorial Memo

The challenge of the times

Can you measure the *profit dollars* which your packages are earning this year? And can you pinpoint the *unnecessary dollars* which your company is *spending* on packaging?

These were questions raised last month by the Packaging Division of the American Management Assn. and they could hardly have been more timely. In this period of profitless prosperity a cold, hard spotlight is being turned once again on packaging to see (1) how it can be used aggressively to build more sales and more profit dollars and (2) how it can be used defensively to reduce the pressure of operating expense.

An AMA workshop seminar on "Packaging Costs and Controls" sought, quite properly, to build, on the common ground of packaging, a bridge between technical and non-technical operations, between research and engineering, between design and production, and between manufacturing and marketing. As the prospectus said, this isn't easy.

But AMA has done a service in pointing out once again the universality of packaging interest and responsibility in the company structure.

"Whether," it says, "you are broadly responsible for profitable tie-ins between packaging and other company functions, or whether you are assigned principal management responsibilities for package development, design, production or merchandising—you're facing a critical challenge today. To meet it, you must sharpen your ability to evaluate and control the increasing flow of packaging dollars . . . to integrate packaging with pay-out and profit goals for men, machinery and materials."

To meet this challenge, in other words, it is essential that management, sales, advertising, production, research, purchasing and quality-control departments put aside their often diverse interests and concentrate their endeavors on the single subject of packaging.

Those who say that packaging education is a matter for engineers alone, for production men alone, or for sales managers alone, are, to our minds, quite wrong in their concept.

Those who take the position that packaging knowledge begins and ends in the particular product field the company serves are equally wrong—for it has been clearly shown time and time again that the best packaging ideas are universal in application.

The twin goals of earning more and spending less through packaging can only be gained if the best brains from every department are brought together with the objective of picking up ideas not from competitors—who have already made the most of them—but of the application of new ideas from less-obvious sources far afield.

The Editors

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From Nashua's talent with paper and packaging . . .
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MODERN PACKAGING

November 1960 Vol. 34 No. 3



Which is easier *for the consumer, the boil-in-the-bag pouch or the foil pan that goes into the oven? This is just one of the searching questions that processors of pre-cooked frozen foods must decide.*

CONVENIENCE IS KING

With today's close rivalries, it may be the one factor that determines product success or failure. Never in the history of packaging has so much attention been paid to a single word

Today the most important word in packaging is "convenience." Heat-and-eat, cook-in, boil-and-serve are merely catch phrases which dramatize a trend now sweeping far beyond the food field into every product category. Easy-opening devices and other package refinements once regarded as extras are rapidly becoming today's "musts."

"The craving for convenience is spreading across America like a tidal wave," says Charles G. Mortimer, chairman of the board of General Foods.

The whole concept is reaching such proportions that packaging men everywhere are being forced to stop and analyze the full meaning. Questions like these have become of momentous import:

- Will a revolutionary convenience package have real value to the consumer, or is it a gadget?
- Will a tear tape or pour spout that adds a certain amount to packaging costs sell enough additional product to pay for the device itself?
- What's really the more convenient pre-cooked frozen-food package for the housewife—boil-in-the-bag plastic pouch, or a foil pan?
- Is color coding really a convenience in selection? Should we color code our packages for variety, style, size, flavor or fragrance?
- How important is ease of disposability of the package by the consumer?
- Are we losing out because our package is too tall? Too short? Too wide?

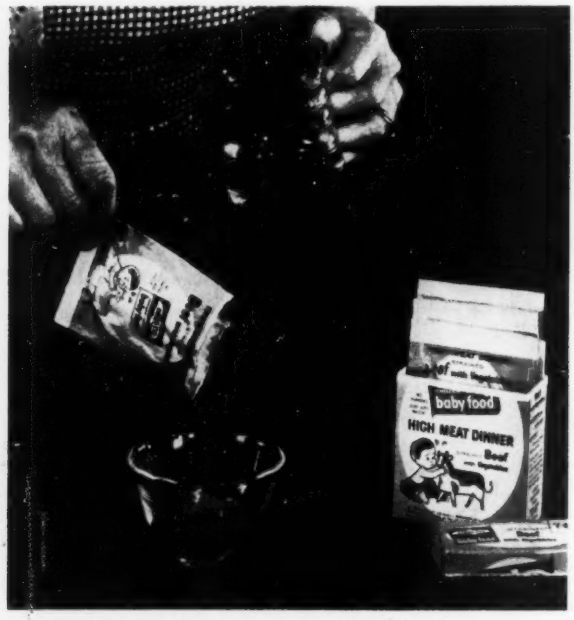
In many quarters this new concept of convenience is being viewed as the one remaining way to improve the marketing position through packaging.

The packaging head of one large company sums up the situation this way: "We've done just about



PHOTO COURTESY ALCOA AND UNITED SHOE MACHINERY

Easy tear-out can tops *that do not require a can opener would make consumers happy. A revolutionary construction is currently being tested on aluminum cans for frozen orange-juice concentrate.*



Freeze-dry processing—*with baby foods already on the market as examples—is being looked upon as one of the next big developments, providing new package convenience of storage without refrigeration. The product is prepared for use simply by adding water.*

all we can to match our competition on quality: there's little difference in product quality today. We've given our products as high a degree of package protection as is consistent with sound economics. We've gone about as far as we can go in upgrading package appearance. The most potent force we have left is our ability to create packaging that makes our products easier to use."

A. C. Nielsen Co., whose reports are the "bible" of marketing research, finds that sales of convenience items increased 157% in the '50s, whereas sales of non-convenience items gained only 14%.

According to a recent food-trade study, dollar sales of packaged cake mixes, prepared frostings and other baking convenience items rose 2.8% last year over 1958, while sales of cake flour dropped 7.7% and other non-prepared baking supplies were off 3.4%. The same study revealed that sales of instant mashed potatoes in 1959 soared to more than $20 million, up 60% over 1958.

Sales of prepared frozen-food items zoomed from $100 million in 1953 to nearly $600 million in 1959 and they are still rising.

Says E. E. Stewart, chairman and chief executive of National Dairy Products Corp.: "One of the major requisites of our packaging today is the development of built-in services for foods to make the housewife's tasks easier."

Charles H. Bell, president of General Mills, told stockholders at the August annual meeting: "Rapid increase in population, higher incomes and more homemakers taking office and professional jobs create a heavy demand for foods with built-in conveniences, such as Betty Crocker cake and other baking mixes, instant potatoes and many others."

Roy D. Wooster, executive vice president of the Borden Co., says: "Today's consumer spends roughly 23% of her budget on food. With incomes increasing faster than the rise in food prices, according to the economists, she should be spending less. Instead, she has chosen to keep the percentage constant, applying the difference to the purchase of convenience and built-in service in her foods."

General Foods—the biggest in the packaged-foods industry—has made a collection of outstanding convenience packages for exhibit in the Package Viewing Room at its White Plains, N. Y., offices, to dramatize the trend for executive personnel.

Although the greatest experience and the more spectacular examples are still to be found in the food field, it is important to note that the philosophy of convenience is now spreading to the packaging of almost every other product—both consumer and industrial. Here is a perfect example of packaging lessons in one product field influencing other trades which are otherwise wholly unrelated.

A statement from the often non-committal Procter & Gamble Co. reads as follows:

"It is inherent in the development of packages for consumer goods to pay particular attention to in-use convenience. No other consideration is given more serious attention when a packaging objective is developed and prototypes are evaluated.

"This attitude has led Procter & Gamble into developing an easy-to-grip cap for a toothpaste tube, zip tapes on cake-mix packages, hinged lids on shortening cans, shampoos in plastic tubes and aerosol home permanents."

The Mennen Co., a leading manufacturer of toiletries, reports eight new products in test markets, each with an improved convenience package feature.

Bristol-Myers (toiletries and drugs), which can attribute its leadership in the deodorant field to the convenience of the eminently successful roll-on Ban package which it pioneered.[1] says competition makes it imperative to keep up with the constant demands of packaging refinements.

The dynamic potentials have reached such a point that one leading package supplier has organized a Packaged Convenience Food Institute. The purpose of the project (sponsored by Continental Can Co.'s Flexible Packaging and Folding Carton divisions) is "to help packer customers to merchandise the advantages of packaged convenience foods to the retail trade and to educate customers as to their contribution to good eating."

The new president of American Can Co., Roy J. Sund, predicting greater demand for convenience packages that save the consumer time and effort, says: "Not only will they be easier to open, but easier to handle and store, much lighter in weight and they will have built-in 'sell.'"

Meaning of convenience

Before further discussion, perhaps a quick idea should be given of what is meant by convenience. Actually, it can be divided into two types:

(a) One in which product formulation permits convenience of *product use* by presenting contents in prepared or semi-prepared form—such as instant potatoes, pre-cooked frozen foods, TV dinners and cake mixes. This, of course, puts special demands on packaging.

(b) One in which convenience is in *the package itself*, in myriads of forms—tear tapes, pour spouts, twist-type caps, measuring devices, etc.

The bulk of this discussion will center on convenience features in the package itself.

The strongest justification for the cost of convenience packaging is undoubtedly a situation

[1]See *Great Packaging Discoveries*, "The Roll-on Applicator," MODERN PACKAGING, May, 1960, p. 98.



PHOTO COURTESY DIAMOND NATIONAL

What is true convenience? *The Wander Co. is market testing the acceptance of single-service, foil-paper pouches of Ovaltine in a carton, in contrast to the same product in jars from which the consumer spoons out the required quantities. Question: Is it really more convenient?*

peculiar to contemporary American economy. The American housewife is no longer a slave to the kitchen. She cannot afford to be. More and more the family prosperity depends on the wife being a wage earner as well as her husband. An estimated 18-million housewives, representing almost half of all households, hold jobs outside the home today. To them, time is money. And $2 an hour or more in factory or office, to them, more than justifies the extra cost of convenience foods and other convenience items that may save an hour or two of limited housekeeping time.

The same economic philosophy applies to the non-working housewife who has learned to attach a great deal of value to her leisure time to lead a fuller

Snip-off pour spout *(like those on lighter-fluid caps) turns up on screw cap for Lever Bros. Swan liquid detergent if consumer wishes to use the polyethylene container as a squeeze bottle. This refinement is just one more example of the importance that manufacturers now attach to convenience.*



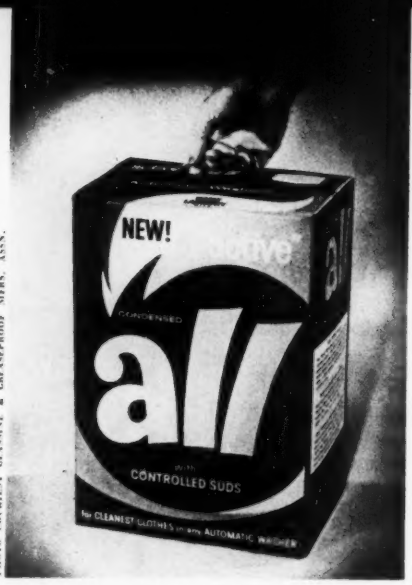


PHOTO COURTESY GLASSINE & GREASEPROOF MFRS. ASSN.

Carrying handle *of sturdy polyethylene tape on huge automatic-washer-sized package of All detergent is much-appreciated convenience in home laundry. There is also a tear strip for easy opening of the protective, greaseproof-paper-lined, wax-laminated carton.*

life through civic, school and church activities.

All of the packaged conveniences expedite household tasks—aerosol sprays, squeeze-bottle window cleaners, pre-measured detergents, ready-to-serve packaged baby and pet foods. With the virtual disappearance of domestic help, it is no longer a figure of speech to say that such packaged products provide "built-in maid service." They are the only kind of maid service the modern housewife has!

What consumers say

That housewives want these conveniences is revealed in almost every consumer survey. Out of nearly 5,000 housewives recently asked to tell food manufacturers and processors how to make their products more useful, 60% said: "The product is good, but do something about the package."

About 24% want something done about package sizes to fit the needs of today's families; approximately 13% are asking for smaller sizes, while 8% want larger sizes to serve larger families; the remainder want package sizes which are more convenient to fit on cupboard shelves.

Complaints about packages that are hard to open, hard to empty, or hard to reclose were registered by 19%, who mentioned specifically glass containers, frozen-food containers, spice and coffee cans, bread wrappers and flour cartons.

Improved labeling and direction copy was wanted by 10%, and 7% would like to see greater package durability: spice cans that do not rust, more cereals in aluminum foil, frozen-food wraps that don't get soggy, sturdier baked-goods and cookie packages that reduce product breakage.

Similar criticisms were voiced in packaging discussions at *McCall's* recent National Congress on Better Living in Washington. The 100 delegates from all parts of the United States suggested:

- No more directions on the bottoms of packages.
- No cellophane wrappings that can't be rewrapped.
- No tall, skinny bottles that won't fit on cupboard shelves or round containers in general.
- Spouts on everything that can be poured.
- Cereals in packages of a size easier to handle.
- More screw caps on glass jars.
- More plastic bags for frozen fruits and vegetables.
- See-through glass packaging wherever feasible.
- More detailed information concerning the length of time that frozen foods can safely be kept.

Are you taking heed?

Convincing proof that today's packagers are seriously trying to do something about the dagger probing and hacking of impenetrable cans, boxes, bags, jars and bottles that have been consumer targets for years are the literally hundreds of packages with improved convenience features appearing on the shelves of supermarkets.

At the same time, smart merchandisers are not rushing into the extra expense of a convenience feature blindly. They want to be assured first: Will it work? Does it have real value for the consumer? If a package reads: "To open, press here," they want to be convinced it *will* open when you press there. Before they put single-service portions into unit packets, they want to be convinced that this is actually a more convenient way for the consumer to use the product than spooning it out of a jar.

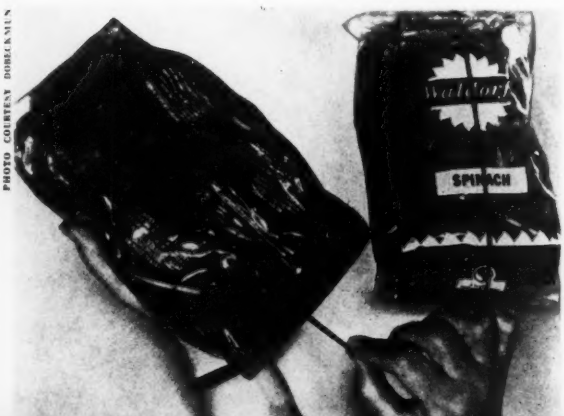


PHOTO COURTESY DOBECKMUN

Tearing tape *on Safeway's Waldorf spinach bag shows that packagers are heeding consumers' long-standing complaints about transparent film packages that are hard to open. Tape runs down front of printed bag.*



Responsible *for formation of Packaged Convenience Foods Institute are Tom Cathcart (left) and Herb Holbrook. They are shown examining packages of the type looming so important in today's marketing that an entire project devoted to this interest is being sponsored by Continental Can Co. Respectively, the two men are general manager of sales for the Boxboard & Folding Carton Div. and the Flexible Packaging Div. of Continental Can.*

And they are spending millions of dollars, in the aggregate, on research to determine the efficiency of such convenience developments.

"You'd be amazed," one packaging man said confidentially, "to know what we've spent to find out the true convenience value of soluble-film packets. Convenience packaging has become so important to us that we are now actually looking for inventors to employ as consultants on our staff."

"The food industry alone will be spending during the next decade 50% more per year than the annual $100 million it is now spending on research, most of it concentrated on developing new convenience food products," says the new Packaged Convenience Foods Institute.

In the face of all this activity, every packager will be well advised to step up his thinking about convenience, lest a more-creative competitor beat him to the punch.

12 ways to convenience

Almost every product can be analyzed with respect to at least a dozen different aspects of convenience packaging. A brief discussion of them, we believe, may be helpful to every packager in viewing his own products in the light of this significant trend.

1. *Convenience of product form.* First of all, the



Convenience of quantity. *New giant jars of instant coffee reveal increasing attention to consumer preferences for all sizes. A recent study shows that 24% of the shoppers want something done about package sizes. While 13% are asking for smaller sizes, 8% want larger sizes. The remainder wants sizes that are more convenient for storage on kitchen shelves.*

close relationship that exists between the form of the product and the form of the package should be recognized. Whether the product is solid, liquid, paste, granular, cake or tablet, obviously, has a great deal to do with the manner in which it is packaged. Often a change in form of product leads the way to new package convenience. For example, the convenience of pushbutton containers for whipped cream and foam shaves was possible only by processing the products so that they could be pressure packed. The new packaging of Gail Borden's Signature Quality Natural Cheddar cheese in block form provides convenience in slicing to fit a standard slice of bread or crackers. Some observers point to the new low-temperature drying process (dehydrofrozen products) as one of the next big convenience developments. Foods packaged in this form—with baby foods already on the market as examples[2]—provide convenience of storage and use convenience of preparation simply by adding water.

2. *Convenience of selection.* A package designed to facilitate choice helps to lead the shopper quickly to a specific variety or brand. Examples are packages for milk and cream cheese, color coded to designate varieties and flavors. Sylvania's electric-light bulbs appear in color-coded packages to distinguish different wattages. Often a transparent package that shows off contents can be used to make selection easier—a strategy almost universally applied in soft-goods merchandising. And there is, of course, a never-ending objective to make selection more convenient with improved graphics that in-

[2]See "GF's Bid: Frozen Instant Baby Foods," MODERN PACKAGING, June, 1959, p. 114.

TABLE-READY IDEAS



PHOTO COURTESY OWENS-ILLINOIS

Fancy glass closure, *cellulose banded over standard pry-off metal cap, on Smucker's gourmet line of preserves converts package into decorative table jar when the protective metal cap has been removed.*



PHOTO COURTESY DOW

With printed lids removed, *Borden's colorful new low-cost, high-impact-polystyrene containers for cottage cheese are ready for serving without any commercial identification. When asked, 79% of 450 housewives said they would serve this package at the family table; only 55% said they would serve conventional paper containers.*

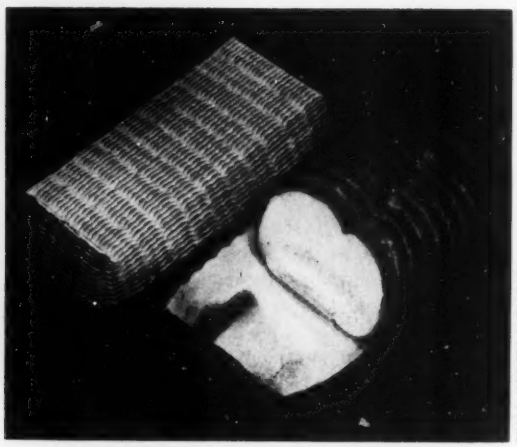


PHOTO COURTESY MARATHON

Foil-laminated tray *is designed to look like a bread basket for Awrey's Bakeries' Italiano bread, sliced and ready for serving after being heated in its package.*

stantly communicate to the shopper what a package contains and how it can be used.

3. *Convenience of quantity or unit.* Package sizes must be calculated to meet consumer requirements. Today, there are divergent demands for larger sizes as well as smaller sizes, depending somewhat on locality. In metropolitan centers, where there are many apartments for small families and live-aloners, the big demand is for small-quantity packages. In suburban areas and small cities, where families are larger and shopping trips less frequent, there is considerably less need for very small sizes. The packager, however, must be prepared to offer sizes and quantities to suit the convenience of all shoppers if he is to prevent competitive encroachment. New family sizes in frozen-food lines (including the popular polyethylene bags) and the jumbo jars of instant coffee, peanut butter and other items are obviously in recognition of the demand for convenience of quantity. It is not economy alone that makes "big, economy sizes" popular; more important may be convenience of less-frequent purchase.

Packagers today must also decide whether greater convenience can be offered by single-use and single-service packages. Ovaltine, regularly in a glass jar, is now being market tested on the West Coast in a carton that holds 12 foil-paper pouches, each with just enough for a single use. Sell's new Low Calorie Diet—a special blend of nutritious foods in an instant formula—is packaged in a carton containing four 2-oz. envelopes of the formula, each conveniently pre-measured for one 225-calorie meal.

General Foods is market testing Gainesburgers—a new dog food in a package that offers the dog owner the convenience of six individually wrapped patties, each containing a quantity sufficient for a single meal for a dog. A new mouthwash in powder form, called Absor'breath, comes in an easy-opening and reclosable flip-top-box pocket package containing 12 handy single-use glassine envelopes of the product, each including a throw-away paper cup.

A. E. Staley Mfg. Co. is offering Sta-Flo powdered instant starch in single-use cartons for use in automatic coin laundries. This new packaging brings to mind the whole subject of quantities and units for convenience in vending machines. Automatic vending is a big trend that is convenience motivated and it requires very specialized planning of package units.

4. *Convenience of opening.* According to most consumer research, nothing is more irritating to women than packages that are difficult to open. But usually little is done to add these refinements that often add to the packaging cost until competition forces improvement. Today, however, when package convenience may be one of the last resorts to win a better market position, there is a rush to get there first with an easier-opening feature.



PHOTO COURTESY PACKAGE PRODUCTS

Selection is facilitated *by unusual construction of this Suzy bra package that should be of special interest in soft-goods field. Grommeted paperboard sleeve provides for rack hanging and permits the polyethylene bag, holding product, to swing free for 100% see-through inspection. Printing on sleeve carries brand identity and full product information.*

An outstanding development that could make the can opener obsolete is a new tear-out aluminum top on a low-cost, foil-and-paperboard rigid can which is being market tested for Minute Maid frozen orange-juice concentrate. A simple pull on an aluminum tab, which is welded to the aluminum-can end, instantly removes the top. The device is equally applicable to an all-metal can.

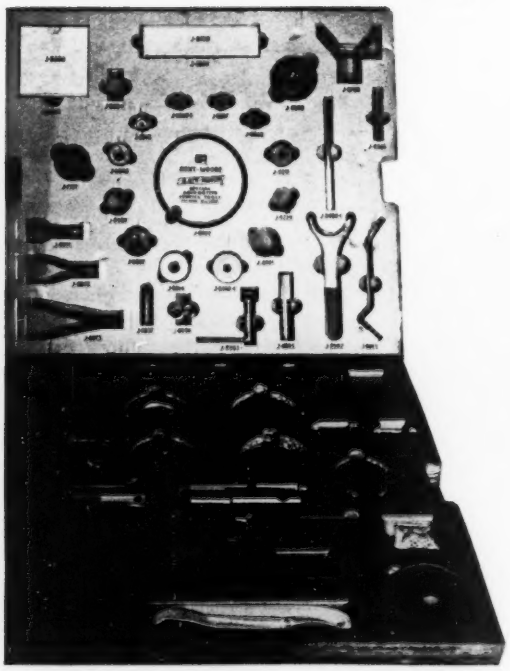
The cellophane tear tape is being applied to more and more products—baked goods, paper napkins, cheeses, pre-packed vegetables and others.

The twist-type cap that started with jams and jellies is receiving continually wider application, as is the screw cap for glass-packed baby foods.

Nearly every major producer of cereals, crackers and cookies now has some device on the carton to make the packages easier to open and to reclose. Folding cartons are constructed with tear strips in several styles integral to the scoring of the blank.

5. *Convenience of reclosure.* Just as they want packages that are easy to open, women want packages that are easy to reclose if contents are not consumed all at one time. All surveys show that they want more screw caps. They continually complain about film packages, particularly for baked foods, that have no means of reclosure for protecting remaining rolls or cakes. They would store products in cans, if there were a method of reclosure. They would like more cheese [*Continued on page 196*]





Largest cavity pack *of special tools for repairing 1961-model cars is this 72-piece Kent-Moore Pontiac set. Inside the telescoping box, individual tools are nested in die-cut layers of corrugated board. Each tool has its own cavity, with tool number printed on die-cut board.*

New function

Here is proof that industrial packaging can be handsome and re-usable as well as protective—and cut costs in the bargain. The Kent-Moore Organization, Jackson, Mich. (350 employees) has devised a dual-purpose "cavity pack" to house its wide line of automotive-service tool sets. In repair shops the shipper doubles as a permanent tool-storage device.

The cavity pack is a series of die-cut corrugated sheets glued together in vertical layers to form a block with multiple "nests" of the proper size and depth for each tool. This block is inserted in a telescoping box. Use of the cavity pack has cut Kent-Moore's packaging labor in half, lowered material costs, reduced packaging inventory and provided several important customer advantages.

As is often the case with industrial packagers, Kent-Moore's product line is extensive. Yet its packaging runs are relatively small in comparison with most consumer products. This is so because the company manufactures the special tools needed by automobile-repair shops to service the five General Motors standard-sized cars as well as the Rambler and Studebaker. Many of the tools are heavy and almost all are vulnerable to shipping damage. And they must be supplied in sets which may consist of as many as 72 separate pieces in each package. There is a new set of tools each year for each make of car. Yet no one set is sold in a volume larger than 8,000 annually and most sell fewer than 3,000. To complicate the picture further, the bulk of Kent-Moore's packaging is done in only a single 10-week period in each year — just prior to the time of new-car introductions.

With so many barriers to package standardization, Kent-Moore had resorted to hand wrapping the single-piece tools in felt wadding, placing each multi-piece tool in its own corrugated box, hand stamp-

Repair sets for new cars are nested in cost-cutting cavity packs built up from die-cut layers of board and shipped in sleeved telescoping boxes, providing auto shops with permanent tool-storage 'chests'

in corrugated

ing part numbers on each and then accumulating all the tools required for a single set in one giant master shipping container. The tools were kept separate with more felt wadding. Sometimes as much as 15 min. were needed to accumulate and pack a single set of tools and a final contents check was difficult. The new package has changed this laborious method of packaging.

The cavity block itself consists of multiple layers of 200-lb.-test corrugated sheet glued together by the supplier to the desired depth. Before gluing, most of the layers are die cut to the exact outer dimensions of the various tools. Spacing of the die cuts is carefully plotted to equalize weight and make best use of space. Bottom layers are left uncut to cushion the entire under surface of the shipment. Die cutting begins with the third or subsequent layers, depending on tool depth. All of the layers are on exactly the same plane at the top surface.

Kent-Moore needs far fewer corrugated boxes now because most multi-piece tools have their own cavities. Moreover, no extra cushioning is necessary. The company reports that claims for transit damage have been all but eliminated.

Six separate cavity packs are used each year by Kent-Moore, one for each of the GM cars plus Studebaker and Rambler. While the package is not inexpensive, discontinuance of wadding and of the many inner corrugated boxes has cut material costs. The number of packs needed to supply each service dealer in the country ranges from 8,000 for Chevrolet to 3,500 each for Buick, Oldsmobile and Pontiac, 3,000 for Cadillac and 2,000 each for the two smaller cars, Studebaker and Rambler.

The cavity pack's greatest cost-cutting advantage is in labor. It has made Kent-Moore's packaging

Packing operation *consists of manual placement of tools in proper die-cut cavities.*





Nested set *permits visual check of Oldsmobile tools prior to application of lid and sleeve. This shipper also provides automobile-repair shops with a handy, re-usable tool-storage unit.*



Shipper *is completed when sleeve of printed, bleached white corrugated board is slipped over the tray. Most sets weigh more than 100 pounds.*

line more efficient, a great asset in view of the rush packaging job which must be done each fall. The company hires part-time help for this seasonal peak; only half as many men are needed on each of the six packaging lines set up for this purpose since adoption of the new cavity pack.

Each of the lines packages tool sets for just one make of car. Line length varies with the number of tools needed. Pontiac, with its record 72-piece tool set for 1961 models, requires a packaging line nearly 100 ft. long this year as opposed to only 15 ft. for Chevrolet. But basic packaging procedure is the same for each of the six lines.

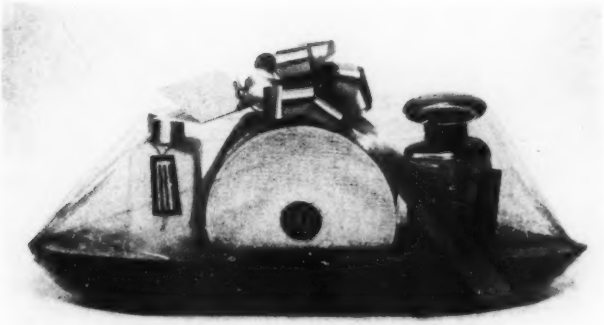
A telescoping corrugated box, supplied to Kent-Moore in the flat, is set up at the beginning of the line and stitched with a power stapler. The correct cavity block is then inserted. The empty box is sent down a gravity roller conveyor. Each man places the tools for which he is responsible in their proper cavities as the box travels by. At the end of the line the box receives its telescoping lid and label. A corrugated sleeve is taped and slipped over the entire package and the completed containers are then palletized, ready for shipment.

After many shipping tests, Kent-Moore is convinced the telescoping box plus sleeve arrangement is necessary for packs weighing more than 100 lbs. Since Chevrolet's tool set this year is light enough to dispense with the telescoping box, the cavity block is glued to a corrugated base before it is placed in its corrugated sleeve.

One of the assets of the cavity pack is the quick check of contents it allows. When individual tools were either felt wrapped or boxed, it was easy to overlook a missing item. Now an empty cavity indicates any discrepancy at a glance.

Kent-Moore's 1960 cavity pack was made entirely of natural kraft. But, taking advantage of long-term package exposure in service stations and to make the package more indicative of the carefully engineered tools inside, the company has "glamourized" the package for all 1961 tools. Now both telescoping box and sleeve have a bleached white outer liner and red and blue printing. The top face of the cavity block is of gold-colored stock with the part number printed under each cavity in blue. The entire container gives a quality impression.

SUPPLIES AND SERVICES: Cavity packs, telescoping box and printed sleeve by Twin Cities Container Corp., Coloma, Mich.



Snug-fitting wraps *are hand applied by Max Factor. Both put-ups include a handsome decorator item: at left, a re-usable tray; below, a milk-glass bowl.*



Gift combos in stretch films

Max Factor application of transparent retractable cast vinyl film suggests some interesting possibilities for sleeker-groomed presentation of ensemble assortments in many fields

The use of stretchable film on two gift sets in Max Factor's fall collection points the way to a practical solution for more neatly tailored transparent wraps on gift or deal combinations in any number of different product categories.

The material is plasticized cast vinyl of 1-mil thickness. Because of its stretchable characteristic, this tough and long-lived film may be drawn tightly around the various items to be packaged in a smooth, snug fit that gives added display appeal.

And the packager needs no special equipment to apply the stretchable wrap. The material is put on by hand and may be secured with pressure-sensitive tape or a hand heat-sealing iron. The procedure can be taught to inexperienced workers in minutes.

Both Max Factor assortments of fragrance and grooming aids are presented with a re-usable decorator item. The "Primitif" set contains a 4-oz. bottle of Parfum Cologne, a 5¼-oz. round box of dusting powder and a 4-oz. bottle of Hand and Body Smoothing Lotion, stretch-film wrapped along with a handsome tray. A decorated milk-glass bowl gives added appeal to the "Hypnotique" gift set containing a 5-oz. package of dusting powder, a lamb's-wool puff, a 6-oz. bottle of Hand and Body Smoothing Lotion, a 2-oz. glass aerosol of Hypnotique Spray Mist and four yellow bars of guest soap. Prefabricated ribbon bows complete the put-ups.

The plasticized vinyl film, which stretches in two directions, is the same type as that used in skin packaging. Although more expensive than other stretch-type films, it reportedly provides special advantages of sturdiness, clarity, sparkle and ease of handling often needed for combination presentations of packaged food and toiletries items.

SUPPLIES AND SERVICES: "Krene" cast vinyl film by Union Carbide's Union Carbide Plastic Co., 270 Park Ave., New York 17.

Roll-fed cigarette cups

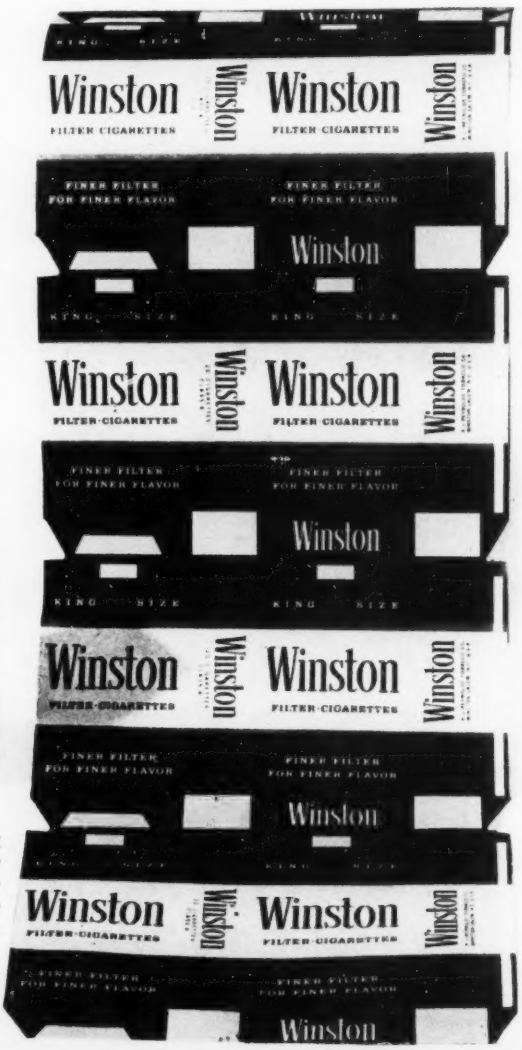
New label attachment for standard soft packers may be the beginning of a whole new concept in combining all components of the traditional package in a single wrap —with wider applications in sight

A significant step toward realization of a long-standing objective in cigarette packaging—namely, to combine all elements of the conventional soft pack into a single roll of material—is seen in the development of a new roll-feed label attachment for standard soft-pack cigarette packaging machines, forming the outer paper "cup" from a continuous web rather than from cut sheets.

First to install the new system on one unit was the R. J. Reynolds Tobacco Co., for Winstons, but four other leading cigarette firms are already trying out the new procedure on some 5 units out of a total industry potential of about 3,000 machines.

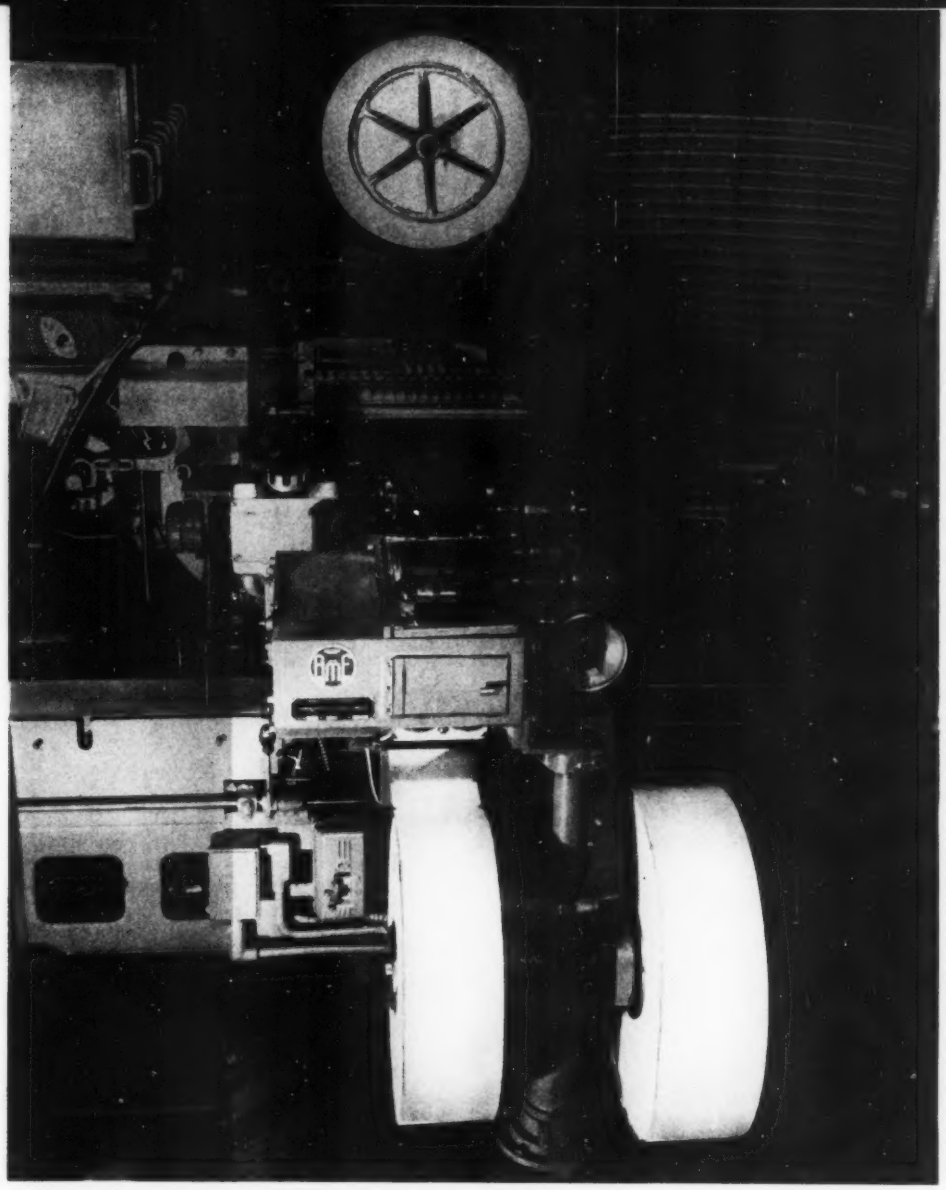
The new attachment, which feeds and cuts the pre-printed, indexed, cup-type labels from a roll, replaces the previous method of individual label feeding from stacks of pre-cut lengths.

It represents one of the first major modifications





Swatch from Winston roll *shows printing arrangement and indexing of material for accurate cut-off. There is no visible change in finished package, but roll labels reportedly produce a neater pack at lower cost.*



Installation on one unit *at R. J. Reynolds' plant, Winston-Salem, N. C., shows roll of 29,000 labels that runs (center foreground) for 3 hrs. and 40 min. without changing. Another roll (right) is ready to be moved into position. Old method requires manual loading of 500 stacked, cut labels every 3 or 4 minutes.*

in the operation of standard cigarette packers since they came into general use more than 40 years ago. And all indications are that the cigarette industry regards it as a possible means of eventually using a single roll of material, incorporating what are now separate components of the pack—paper-backed foil, printed cup label, cellophane overwrap and tear tape, or similar opening device—all of which must now be applied separately.

And the goal may not be far off, according to the supplier of the new roll-label stock, due to the availability of today's improved protective materials and modern techniques for combining them by lamination into efficient single, multi-ply rolls of material. This, of course, was not possible when the original cigarette-packing machines were designed.

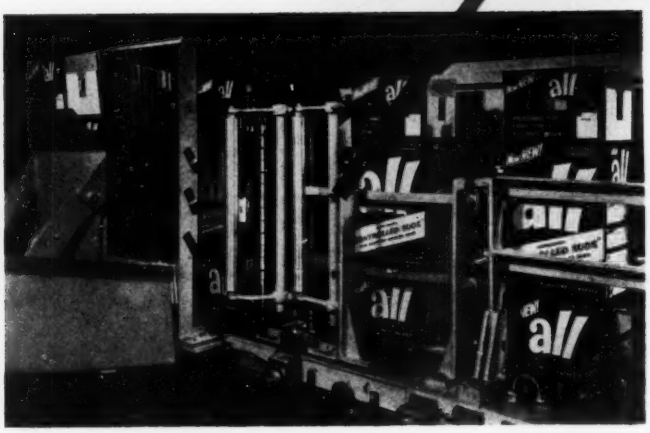
In fact, as time goes on, it is expected that the use of these combinations of materials in roll form may lead to the simplification of many other types of packaging-machinery operations in other product fields presently requiring multiple-step wrapping.

Reportedly, the new system produces neater, more attractive packages with potentials for substantial economies. [*Continued on page 209*]

SUPPLIES AND SERVICES: Roll-feed labels by American Can's Marathon Div., Menasha, Wis. Roll-feed machine attachment by American Machine & Foundry, 261 Madison Ave., New York 16.



Cartoning line *for 20-lb. size of Lever's All detergent achieves 40-per-minute output with, essentially, a straight-line design. Cartons move, left to right, from erecting and bottom-closing unit to the rotary filling unit, then to the sealing and compression machine.*



Set-up section *passes vacuum-opened cartons through rolls that break folds 180 deg. Pulled by side-mounted lug chains, cartons slide over glue rolls and a mechanical tucker for the trailing dust flap. Other flaps are closed by fixed plows.*

Line for a giant carton

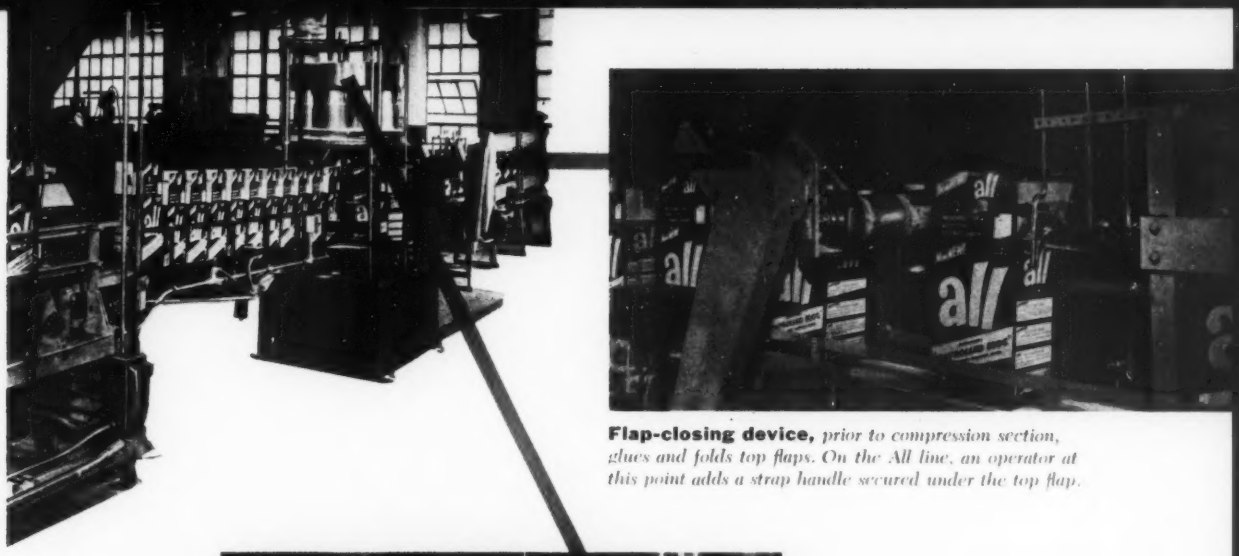
The trend to giant cartons for such consumer products as detergents, potato chips, dog food, grass seed and fertilizer has outstripped mechanical packaging techniques until the development of a new machine to automate what had become a costly hand operation became inevitable.

In its first use at the Baltimore and Los Angeles plants of Lever Bros. for 20-lb. packages of "All" detergent, new set-up and closing equipment is coupled with a rotary filler for non-stop handling of the oversized folding paperboard containers at a rate of 40 per minute—requiring only one-half the personnel used in previous hand operations and producing a gain of 300% in output per manhour.

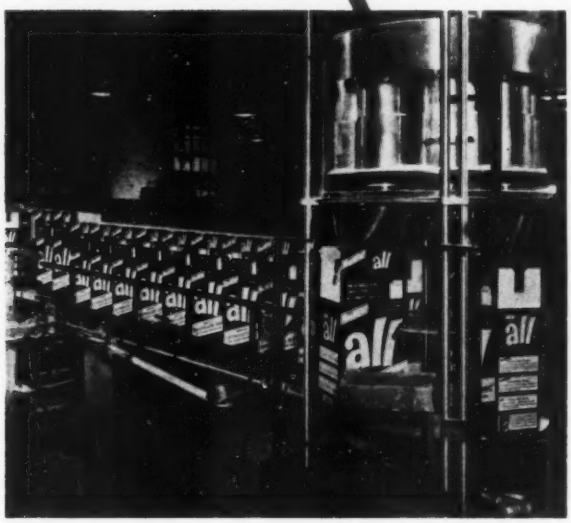
The principal original feature of Lever's carton machine is its open-top design, which permits the running of cartons of virtually any height and suggests the possible addition of deal-packaging machinery. In width and depth, cartons measuring up to 14 by 8 in. can be accommodated.

Line operation of the installation is as follows:

Flat cartons, held in an inclined magazine by a chain-driven back-up plate, are fed into the set-up machinery by a reciprocating vacuum-cup device which automatically opens each container as it is pulled into feed position. The heavy cartons (com-



Flap-closing device, *prior to compression section, glues and folds top flaps. On the All line, an operator at this point adds a strap handle secured under the top flap.*



Rotary filling unit *utilizes back pressure of cartons on in-feed conveyor to fill its four pockets. Volumetric filler then discharges cartons to final closing conveyor.*

Lever Bros., switching from hand to automatic methods for the packaging of 20-lb. quantities of All detergent trims labor 50% and gains 300% in output per manhour

posed of 28-point bleached sulfite board laminated to 3-point waxed paper) then pass through vertical ironing rolls that break them 180 deg., squaring container walls and preventing reclosure. This is a key feature necessary with the extra-heavy cartons to insure perfect squaring prior to gluing.

Resting on their vertical main flaps, the open cartons are propelled by side-mounted lug chains over a reciprocating tucker that folds the trailing bottom dust flaps. A conventional glue roll next applies a cold resin adhesive to the bottom main flaps. These flaps are closed by stationary guide rails and each carton is then picked up by a belt conveyor and moved to the filler. The entire mechanical action of the carton set-up machine is governed by a single drive through three cams.

The four-pocket volumetric filler accepts cartons from the feed conveyor. Filled cartons travel on a straight-line belt where tops are glued and folded, then pass through a compression and casing unit.

SUPPLIES AND SERVICES: Carton machine and compression unit by Thiele Packaging Machinery, 1000 Berry Ave., St. Paul 16. "Flexo" filler by Allied Equipment, 940 Nepperhan Ave., Yonkers 3, N.Y. Cartons by Packaging Corp.'s Ohio Boxboard Div., Rittman, O., and Diamond National's Gardner Div., Middletown, O.

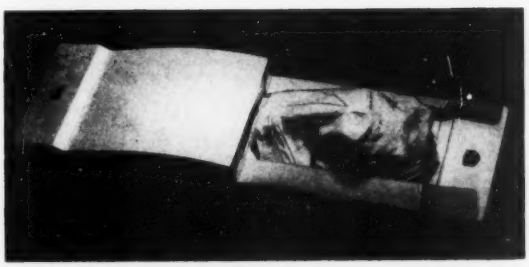
Expansible card pack

How to achieve at low-unit cost one basic self-selection package for three apparel products, each requiring a different degree of container depth? This was the problem facing the design firm commissioned to develop a supermarket package for Barbara Brent, Inc.'s line of Cover Girl bras, which are offered in three styles: soft, contoured and wired.

The problem was solved with the engineering of a die-cut "pocket-book construction" paperboard fold-over card pack that is made suitable for all three bras simply by varying the width of the bottom panel. The one-piece unit thus can range from relatively flat (for the soft bra) to flared out (for the wired bra, which requires extra package depth as protection against crushing). Fold-in side flaps hold the product in place and guard it against pilferage or accidental loss, as shown in the lower illustration at the right.

The new Cover Girl card package is closed by stapling at the point where front and back panels come together. For self-selection display versatility, it can be stood up on its base or hung from a pegboard rod. *Design by Nesbitt Associates, 75 E. 55 St., New York 22. Card package by Container Corp. of America, 38 S. Dearborn St., Chicago 3.*





IDEAS

Drake gives new impulse appeal to single-service cakes

Designed to promote single-portion packaged cakes as impulse snacks like candy is a three-tiered counter-display carton introduced into retail stores by Drake Bakeries, New York. The packager's "Snack Bar" self-selection merchandiser is offered in two sizes (14 in. wide, 21 in. wide) to suit varying space requirements.



Surface design on the colorfully lithographed one-piece paperboard unit makes effective use of the company's famed drake trademark to create consumer interest when the display is partially empty. The trademark appears in a repetitive pattern across the riser panels of the second and third tiers. It is also featured on the bottom and top risers as well as on side panels of the display.

For strengthened brand identity, the impulse-appeal merchandiser is printed with Drake's family colors—orange, blue, brown and white. Orange is the dominant background color. Holding several dozen individually packaged cakes, the display piece is varnish coated to ease cleaning problems and to give it longer service life. *Design by Robert G. Neubauer, Inc., Fairfield, Conn. Display carton by U. S. Printing & Lithograph, 340 Beech St., Cincinnati 12, and Spurgeon Tucker, Inc., 381 Canal Pl., Bronx 51, N. Y.*

A futuristic product dramatized in corrugated

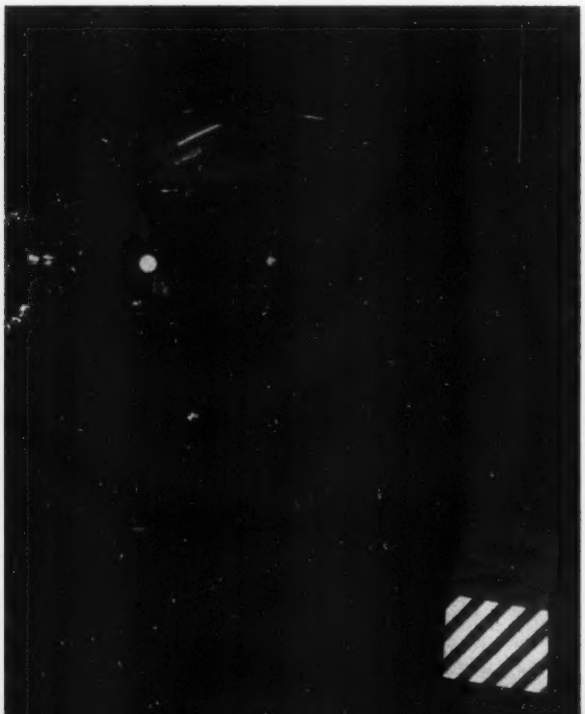
Acting on the philosophy that a dramatic new product deserves dramatic presentation, the North Electric Co., Galion, O., introduces an unusual one-piece telephone in a colorful and eye-catching triangular corrugated carton that also gives shipping and handling protection to the instrument. The compact new telephone, shaped for convenient hand holding, incorporates dial (located in the bottom of its stand-up base), transmitter and receiver.

In addition to the tuck-style carton's striking three-sided construction, merchandising appeal is achieved with a simple three-color design printed on bright white linerboard. The design—in blue, yellow and black—is calculated to suggest the modernity of the new telephone. A color illustration of the product appears on the broadest side of the triangular container. Brief copy on the other two side panels expresses the themes: "Elegance for eloquence" and "Tomorrow's telephone today."

North Electric points out that when two of the triangular cartons are placed together face to face, they form a cube that facilitates shipment packing. *Carton by Mead Containers, div. The Mead Corp., 4927 Beech St., Cincinnati 12.*



IN ACTION



Functional fluorescence

Light-reflective side panels that convert an ordinary multipack carton for canned motor oil into a highway warning emblem is the ingenious packaging extra by which the Pennzoil Co., Los Angeles, hopes to strengthen sales-making consumer good will. The idea of providing a utilitarian container with a useful product-related function is worth consideration by packagers in many fields.

Diagonal stripes, printed in fluorescent ink, occupy the side panels of Pennzoil's carry carton for two cans of motor oil. Carried in the trunk of an automobile, the carton can be set out on the road to warn other drivers of a disabled vehicle. The reflective stripes gleam brightly in the headlight beams of oncoming cars and can be seen at night as far away as 2,500 ft., says the packager. The original contents can be used to hold the carton in place when it is used as a warning device. If the oil has already been consumed, a heavy stone, gravel or dirt can be used to weight the container down and keep it from being blown away, Pennzoil points out. *Carton by Brown & Gauge, Inc., 1538 E. 41 St., Cleveland. "Codit" light-reflective inks supplied by Minnesota & Mfg. Co., 900 Bush Ave., St. Paul 6.*

Mechanizing a complex



High-speed assembly, coding, filling and capping of Mennen's molded containers for screw-feed stick deodorant halves labor costs through automatic handling of four intricate components

Savings of 57% in labor with a 40% rise in output and major improvements in efficiency are the impressive accomplishments of a trail-blazing new automatic packaging line at The Mennen Co., Morristown, N.J., (375 employees). The Mennen line specifically demonstrates the significant progress which has been made in the speedy assembling, filling and closing of multi-part plastic packages.

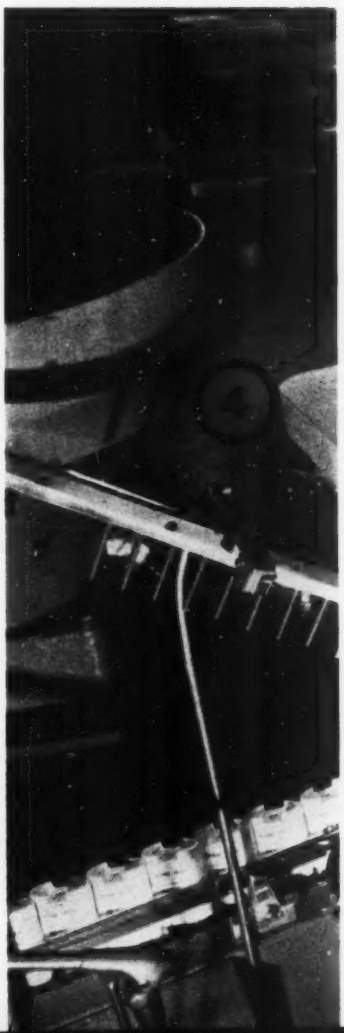
The assembly unit introduces precision automation of a type unusual to packaging—but which may rapidly become more common as intricately molded plastic containers move into volume use.

Developed for the company's Speed Stick* and

*See "Screw-Feed Stick Deodorant," MODERN PACKAGING, March, 1958, p. 161.



Component parts of package *are arranged here in the order in which they are assembled on the special automatic machine pictured at right. Circular washer, which fits in recessed portion of plastic platform (bottom), snaps into a cut-out in screw below knurled knob (top) during threading operation to lock assembly together.*



Unique machine, *in continuous motion, performs five key operations at the four numbered locations during clockwise rotation. Platforms are unscrambled and fed at (1). Washers (from right) and screw mechanisms (from left) are positioned at (2) and barrels are swung into position at (3). Rotary chucks and cam-action pedestals then assemble the parts on covered rear sector, starting at (4). Discharge of assembled packages is to the right. (This photo is repeated on pages 112 and 113, keyed to detail drawings of the four stations.)*

plastic package

Date Line deodorants and rated at 150 units per minute, the new U-shaped packaging facility starts with the continuous-motion rotary machine that smoothly puts together a four-component, oval-shaped polystyrene and polyethylene container. Previously, this assembly operation alone required 18 operators working with semi-automatic drill-press equipment on two shifts; it now needs only four workers and the assembly operation is integrated directly into the final packaging line.

The significance of this key mechanical unit is its substitution of high-speed continuous motion for the intermittent action of station-type machines customarily used in such complex packaging operations. And the sensitivity and positive action of the various mechanical elements in this equipment may point the way to more efficient assembly of other custom-made rigid plastic packages.

Further savings have been achieved with a specially modified liquid filler to handle the hot product, a cooling section to solidify the filled stick deodorant and automatic capping equipment that contains a new attachment for application of a proof-of-purchase stamp. Six of the 17 workers previously required in the filling, capping and case-off sections have been freed for other duties.

In accordance with the most modern principles, the U-shaped packaging line penetrates the wall of the packaging room, extending into the warehouse storage area at both the start and end of the opera-



tion. It is in the warehouse at the start of the line that the new package-assembling machine is located. In order to understand its action, it is first necessary to know just how the package goes together.

Assembling operation

The body or barrel of the container is an oval-shaped polystyrene cylinder with a molded-in and recessed bottom that holds the propel-repel screw as it passes through an opening in the base of the barrel and is then threaded through an internal, movable plastic platform that holds and propels the stick deodorant itself. A washer seated in a recessed ring in the platform also snaps into an undercut at the base of the screw and locks this rotating mechanism in place inside the barrel. The barrel and screw are injection molded of high-impact polystyrene, while the cap closure and washer are both injection molded of linear polyethylene.

On the assembly machine, which is being run in at 84 units per minute, three vibratory feeders are employed to sort and align the screws, washers and platforms. The barrels enter the machine upside down on a hand-fed linked belt.

To locate the stages of operation, refer to the numbers on the large photograph of the machine on pp. 110 and 111 (which are repeated, at right, keyed to detail drawings of the four principle stages).

Packaging action actually starts near the final discharge portion of the clockwise-rotating machine, at (1). Cam-operated pedestals located at the base of each pocket on the rotating machine turret pick up the plastic elevator platforms. An overhead vertical lug-wheel (see drawing) times and positively pushes these plastic parts into position and also activates a piston pump, which deposits a drop of a propylene glycol-ethyl alcohol mixture into the recessed portion of each elevator.

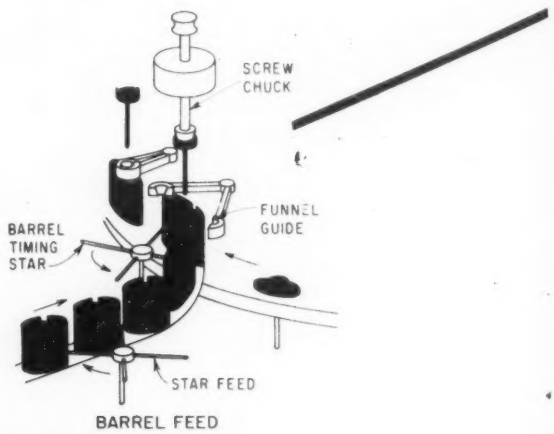
These drops of lubricant are necessary to insure the success of the next operation: placement of the plastic washer. The latter component, which travels to the point of application (2) in a tube, is picked up by a star wheel and swept into position in the recessed ring of the plastic platform, where the alcohol mixture provides the necessary tack to insure positive placement of the washer.

A second star wheel, located immediately above the washer feed, brings the track-fed plastic screws into position, as shown in the drawing of Point (2). They are then picked up by knurled rotary chucks that fit inside the recessed portion of the screw base and hold the part by friction.

Timing and feeding stars sweep the inverted package barrels into position as the machine rotates to Point (3). Here, the feed conveyor is slightly elevated so that the upside-down barrels drop over the elevators in the turret pockets of the machine.

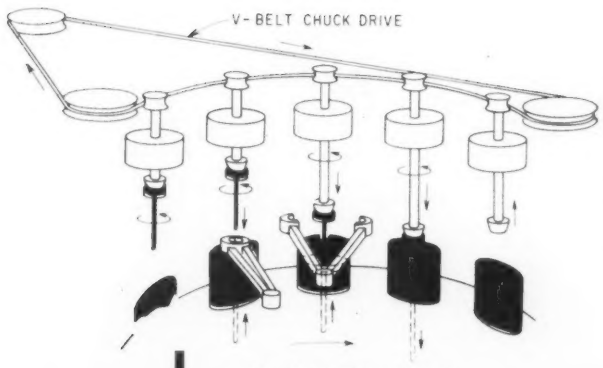
Just beyond this point at (4), the pedestals start to rise and push the plastic platform into the barrels, which are held in place by cam-operated funnels that close over the barrels at this point. (This action is concealed in the photograph, but is shown in detail in the drawing.) These funnels provide a broad target and guide for the plastic screws, which later descend, are inserted into the barrel and are then screwed through threaded holes in the platforms. This latter operation is completed at the far side of the machine when the rotating action forces the plastic washer up over the chamfered base of the screw and into locked position on each container.

This is a critical operation. Because it takes 13½ turns to retract the platforms completely and to seat the washers, the plantary gear drive usually employed on capping machines (which generally need less than two turns) was impractical. Hence, a separate high-speed drive is used on the new machine. It consists of a V-belt that travels in a triangular path around motor and idler pulleys, as shown in the upper part of the drawing of (4). The portion of the belt between the two idler pulleys is brought into contact with pulleys on the chuck mandrels through rotation of the machine turret and



3 Positioning of barrels by star wheels

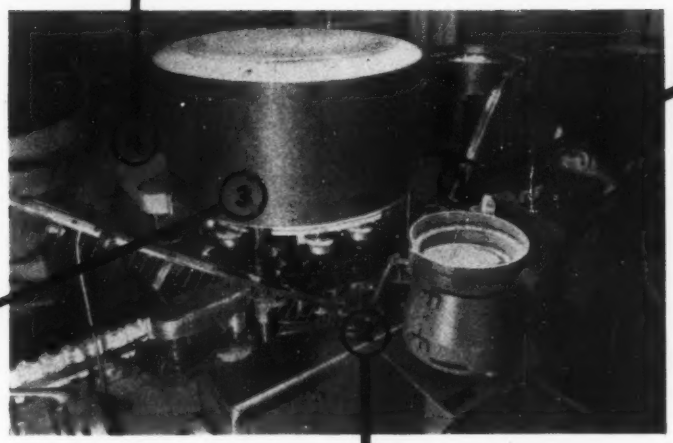
Hand-fed conveyor moves bodies of containers to the machine, where they are timed and positioned by two star wheels. Barrels drop from elevated feed belt over platforms on rotating machine table. Funnel guides clamp over the tops of these polystyrene containers to hold them in position for later operations.

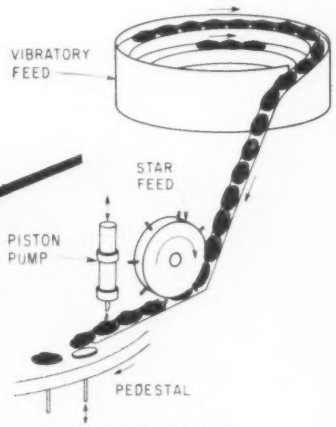


COMPONENT ASSEMBLY

4 Final assembly is a precision operation

At rear of machine, pulleys on the screw chucks come in contact with a high-speed V-belt (concealed in photo). As rotating chuck assemblies lower, the pedestals holding the plastic platforms are raised. Action is completed when the plastic washers are forced into locking position at base of screw shafts and torque clutches on each chuck disengage, releasing assembled package to the take-off conveyor.

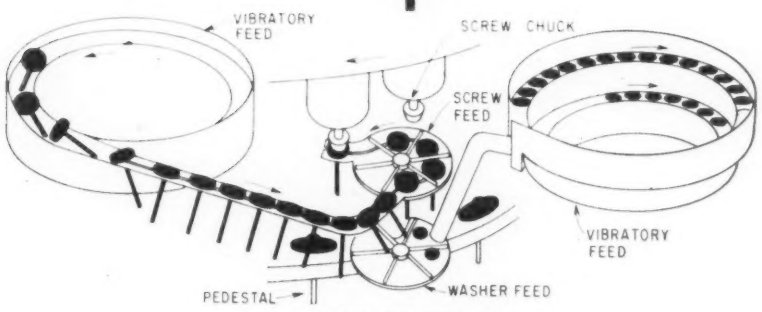




PLATFORM FEED

1 Assembly starts with feed of platforms

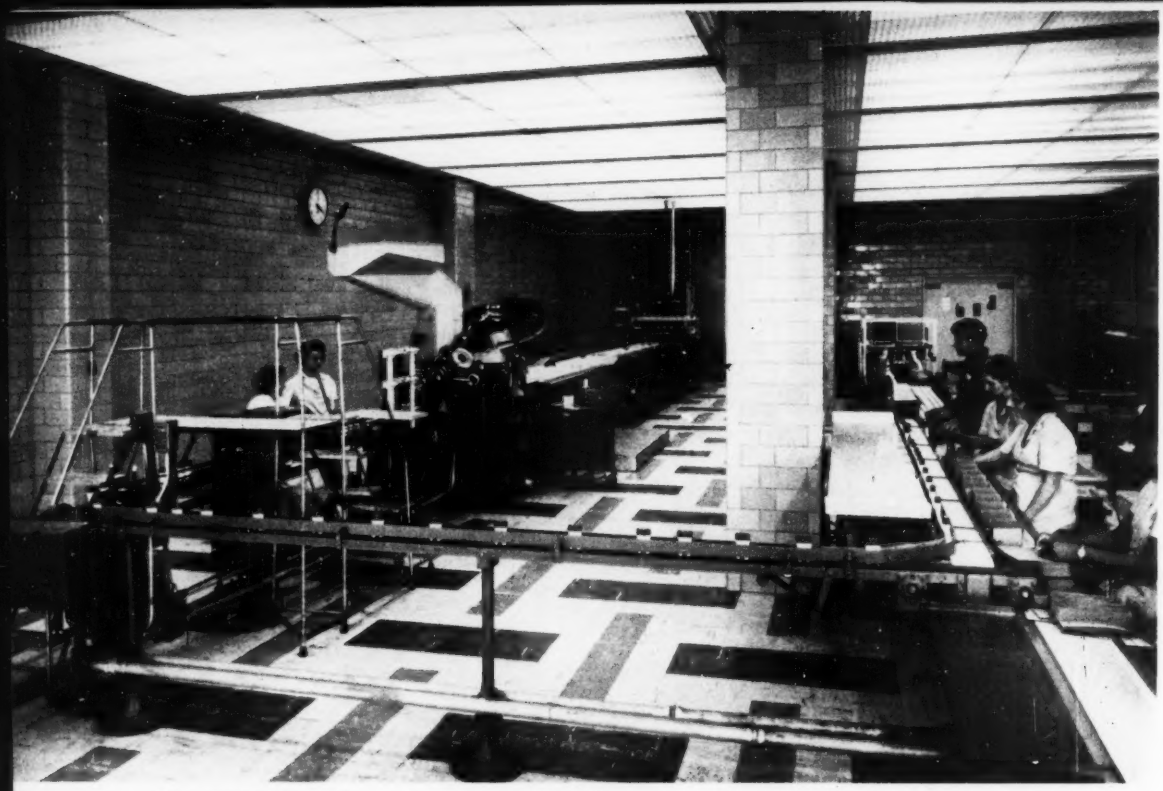
Unscrambler employs vibratory spiral ramp to align these small polyethylene ovals in a track. Platforms are timed by lug wheel, which also activates piston pump that deposits a drop of alcohol lubricant in the recessed top of the platform. Platforms are then accurately positioned on cam-action pedestals on the rotary table of the assembling machine.



SCREW AND WASHER FEED

2 Washers and screws are aligned

Unscrambled and fed by vibratory means, both components are swung into position at this point by star wheels. Polyethylene washers are dropped through a cut-out in the base plate into recessed tops of the platforms, where lubricant insures positive placement. Polystyrene screws, hanging stem downward, are picked up by knurled chucks that fit inside the hollow base of the thumb-screw knob.



New packaging room *at Mennen incorporates filling and closing machines in a modern, U-shaped line with the two points of the "U" penetrating the wall to warehouse at rear, where package-assembly machine is located. Assembled containers enter area from warehouse on left-hand side of "U" into special in-line filler (rear), where they are filled with hot, liquid deodorant. After air cooling on multi-lane conveyor, the containers move to capper (center, left), where proof-of-purchase stickers are also applied. Hand packing in distributor packs and then into shippers is performed on right-hand side and finished shippers pass through an automatic gluing and compression unit, back to warehouse.*

the complete threading operation is, in this manner, accomplished in an arc of only 120 degrees.

Since the force necessary to seat the washer is only slightly less than the force which would either break the polystyrene screws or strip the threads in the polyethylene platforms, special torque clutches have been installed on each of the machine's mandrels to govern the rotation accurately.

When the lower machine pedestals have been retracted, the completed containers are turned into right-side-up position by a special worm equipped with stationary guide rails. The containers then leave this machine to the right of the operator.

Coding and filling

One more operation is accomplished in the warehouse section. Traveling on a linked belt, the packages are code stamped with a product batch number by a rotary under-conveyor unit (of the kind generally used for aerosol containers).

Passing into the packaging room, the plastic containers are filled on a straight, six-valve unit. This has been specially modified by Mennen engineers to handle the molten deodorant, which has a critical melting point and must be closely controlled. The hot liquid product flows to the filler from a second-floor manufacturing area through stainless-steel lines that are heated by an induced current, using the pipes as the resistance element. An air-bubbler level control holds a constant (and low) head of product in a transparent and steam-heated filling chamber to control filling drip. Resistance heaters, installed on each filling valve, assure that the deodorant is liquid as it flows into the containers.

Before the filled packages can be handled further, it is necessary to solidify the product. This is accomplished on a company-built, 33-ft. air-cooler equipped with six nylon-faced belts. The packages are then consolidated into a single line, at present by two operators, and pass into the capping unit. At this point, also, continuous checks are made of the fill weights on a recording weighing scale.

Capping devices

Equipment for applying the polystyrene caps is standard, modified only slightly to handle an oval closure. But Mennen's reliance on merchandising deals in its sales-promotion program has necessitated the development of a special attachment to this machine for applying a proof-of-purchase

sticker, since it would be impractical for a consumer to mail in part of the plastic package.

This device is located on the cap chute and comprises twin punching mandrels that cut circular printed stamps from two rolls of pressure-sensitive tape and apply one sticker each to the inner faces of two caps at a time. The device is triggered by an electric switch, which is located at a star wheel on the package conveyor that controls the containers during the capping operation.

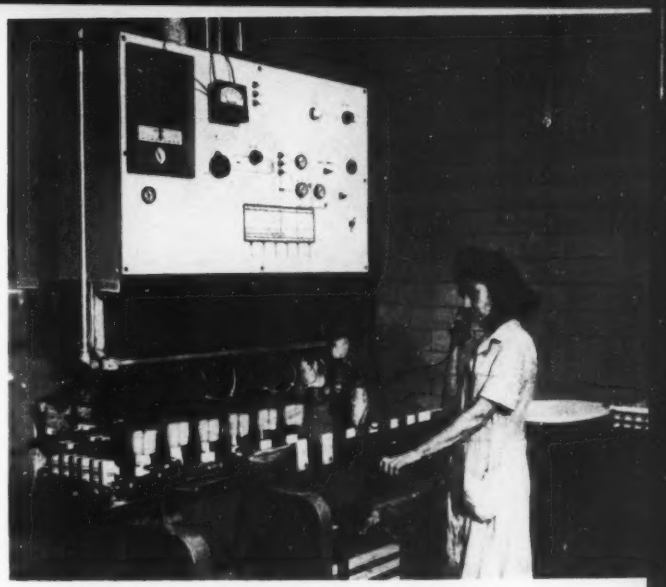
After each completed cap is placed on a container barrel, a spring-loaded rubber roller presses it into place. Because of the high friction developed by the plastic-to-plastic fit, a second compression unit—a rotary belt—is used to seat each cap completely.

The containers are then hand loaded into 12-unit chipboard distributor packs, which are, in turn, hand loaded into shipping cases that hold 3 doz. unit packages. These are passed through a gluing and compression unit and into the warehouse area.

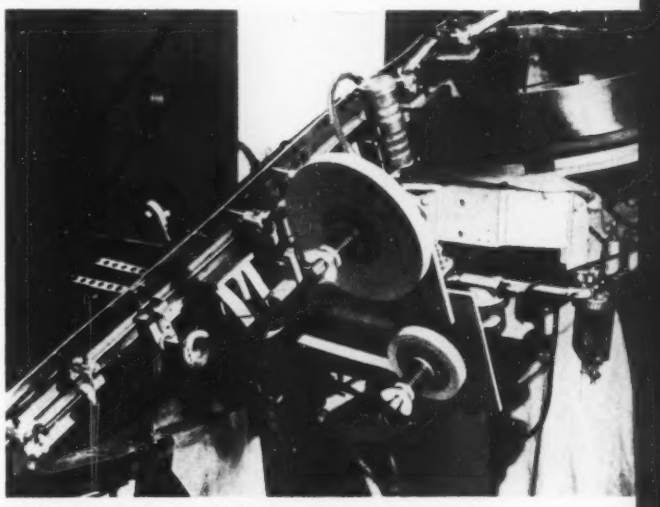
The major benefit of this new line is, of course, the large saving in labor and the increased output. But it has also markedly increased efficiency by minimizing rejects. With the previous 60-per-minute hand operation, faulty packages ran about 15%. The new, automatic equipment has reportedly cut this figure to 0.5%—bringing the rejection rate for this packaging operation into line with that for other products packaged by the company.

Further economies in the packaging operation may be forthcoming with development of automatic uncasing and feed for the containers and a cartoning machine that will group and load the finished containers in the distributor packages.

SUPPLIES AND SERVICES: Plastic containers and parts by Gibson Associates, Inc., East Cranford, N.J. Silk-screen printing by Permanent Label Corp., Bloomfield, N. J. Rotary assembler by PMC Industries, Hackensack, N.J. Coder by Cozzone Marking Co., Newark, N.J. Colton-Hope filler by Arthur Colton Co., 3400 E. Lafayette Ave., Detroit 7. Capper by Pneumatic Scale Corp., Quincy 71, Mass. Tape head and tape by Minnesota Mining & Mfg. Co., 900 Bush Ave., St. Paul 6, Minn. Case gluer and sealer by A-B-C Packaging Machine Corp., Tarpon Springs, Fla.



Special filler *utilizes schematic diagram (on cabinet above) to show critical temperatures and pressures in supply line and filling sump and at each filling nozzle. To keep deodorant liquid, entire supply line is heated with an induced current, filling bowl is steam heated and resistance heaters are located on each filling nozzle.*



Proof-of-purchase stickers *are punched from roll-fed pressure-sensitive tape in a new device mounted on capping machine. Activated by an electrical switch on the package conveyor (out of photo), the unit punches circles from the printed tape and applies them to the under surface of each cap, two at a time.*



Two products *are handled on this line: the large-volume men's deodorant, Speed Stick, and a newer product, Date Line, for women. Date Line package has been displayed to show the proof-of-purchase sticker under the lid and the product batch number printed inside the knurled screw knob by a type of rotary under-conveyor coding machine which is commonly used on aerosol-production lines.*



Moment of history *is re-enacted by Shell's Dr. Aaron Wachter. Nearly 17 years ago, in a laboratory jar like the one shown, he discovered the phenomenon that led to the development of VCI.*

The volatile

Discovered almost by accident and proved out in dramatic wartime use, the 'magic' chemicals that prevent rust of packaged ferrous-metal products have barely tapped their potential

Volatile corrosion inhibitors—chemical compounds with the seemingly magical property of giving off an invisible vapor that prevents oxygen in moisture from combining with steel to form rust—today afford long-term in-package protection to untold millions of dollars worth of ferrous-metal products, from tiny hairsprings to huge diesel-engine components. The potential of these protective chemicals, which save added millions in time and labor by eliminating a former need for grease coating and degreasing, has barely been tapped. One supplier estimates that preventable corrosion causes a loss to American industry of seven billion dollars a year.

The story of the discovery of VCI is in the classic tradition of revolutionary improvements brought to light almost by accident. One morning in 1943, a chemist working with nitrites to develop an additive that would prevent interior corrosion of gasoline pipelines removed the cover from a desiccator jar containing an experimental powder compound. In that symbolic action, he literally lifted the lid on one of the *Great Packaging Discoveries* of our time.

The chemist was Dr. Aaron Wachter, head of the corrosion department of Shell Development Co., research arm of Shell Oil. What he saw when he opened that laboratory vessel nearly 17 years ago were white, needle-like crystals which had formed on the inside of the cover. This phenomenon could mean only one thing: The nitrite powder compound on the bottom of the jar had distilled from solid to solid without going through a liquid phase.

Dr. Wachter analyzed the crystals and found them to be pure amine nitrite. His scientist's mind coupled the volatility he had observed with the recognized corrosion-inhibiting properties of the nitrites and set him on a new experimental tack: an attempt to combine the crystals with paper to achieve an economical, effective deterrent to in-package corrosion of metal products.

The rest is packaging history. Dr. Wachter (later to win an award from the National Assn. of Corrosion Engineers for his discovery) first tried coating paper with pure amine nitrite crystals. It worked, but was too costly for commercial use. From early experiments came diisopropyl amine nitrite, an extremely volatile compound which gives fast-acting, short-term protection to ferrous metals. It is still used as a direct crystalline protective for the interiors of engines.

However, since Dr. Wachter envisioned in-package protection as VCI's biggest use potential, the search continued for a slower-acting, longer-lasting formula. He developed a third compound, dicyclohexylamine nitrite, which incorporated both characteristics. But its initial volatility was too slow. The problem was licked when 90% of the new compound was mixed with 10% of diisopropyl amine nitrite to achieve a VCI trade named "VPI"—for "vapor-phase inhibitor"—that combined rapid early protection with long life.

Then came the problem of wedding VCI to paper in a workable, economical form. Shell researchers tried mixing the compound with paper during pulping. But VCI was wasted in the process and it was

corrosion inhibitors

impossible to tell treated from untreated paper. Next, they broke the crystals into their chemical components and mixed them with various vehicles. Out of this experimentation, the company developed a successful one-side paper coating in which the components of VCI are mixed with a binder and a reacting agent. This coating permits rapid and more-uniform distribution of VCI and its characteristic whitish color simplifies identification of the coated side.

With production obstacles surmounted, Shell still faced the task of getting packaging acceptance for its VCI materials. Dr. Wachter submitted a coated-paper sample to the Naval Research Laboratory in Washington, D. C., where Hayward R. Baker of the lab's chemistry division was himself leading a research effort toward the development of more-efficient rust inhibitors. Dozens of applications followed.

However, it was not until 1951 that two events occurred to win for VCI the recognition that since has accelerated its commercial acceptance in the protective packaging of ferrous metals. In that year the material received its first Government specification (MIL-P-3420; since expanded to cover carriers other than paper).

More dramatic was the other event—the role played by VCI packaging on the battlefronts of Korea. As many an old soldier knows, rifles traditionally came from the arms plant in a thick coating of heavy, sticky grease called cosmoline. Preparing the weapon for use was a 3-hr. job that involved complete dismantling, degreasing and re-assembly. But to the GIs of 1951, this chore was as outmoded as muzzle loading. Packaged without grease covering in a foil and kraft-paper envelope, the rifle was ready to fire within 7 minutes. The secret was an inner sheet coated with VCI, whose vapors guarded even the innermost parts of the weapon from corrosion.

The success of this military-packaging application, which saved 26 manhours of labor per case of rifles compared with the old method, underscored as had nothing before the vast potential of preservative packaging with VCI. Two other suppliers have followed Shell on the market with VCI compounds for the protection of ferrous metals. Although the chemical composition of these materials differs from Shell's, their corrosion-inhibiting action is similar. An indication of how the original VCI development has spread is the fact that various suppliers are now offering VCI materials that inhibit tarnish-causing oxidation of such *non-ferrous* metals as silver, copper, bronze and cadmium. And about a dozen licensees are currently producing coated paper and other VCI products.

Today's annual volume of VCI papers sold in the U.S. is about $1,750,000, according to the Volatile Inhibitors Mfrs. Assn. The chemicals also come in crystal, powder, aerosol and tablet forms.

But it is in substrate coatings that VCI has its greatest future. Besides their use in bags, envelopes and wraps (which need not be tightly sealed, since the vapor is effective in the presence of oxygen and moisture), VCI coatings are being applied to interior linings for cartons containing such bulky parts as machinery components. The VCI vapors travel and protect for a distance of 12 in., eliminating a former need to slush the container with grease and thereby saving packaging time and labor while sparing the user a clean-up job.

GREAT PACKAGING DISCOVERIES—20

MODERN PACKAGING



THIS MONTH'S COVER

Proof *of VCI's corrosion-preventive action is illustrated by test of cork-mounted steel bolts placed in bottles containing a little water. VCI-treated kraft was placed in bottle at left; untreated kraft, in bottle at right. After eight weeks, bolt protected by VCI shows no corrosion, while other is rusted.*



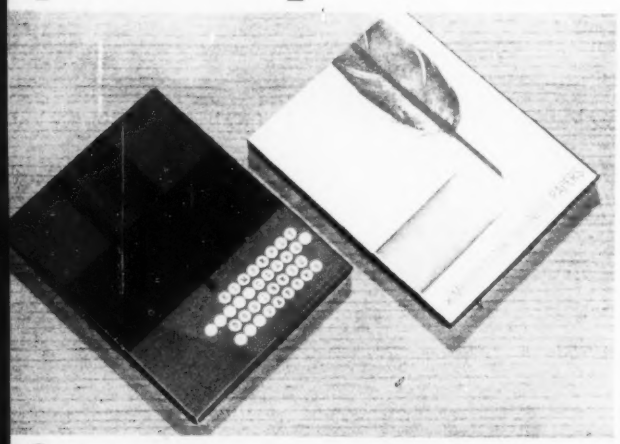
PACKAGING PAGEANT



1



2



3



4



5

1 A 12-in.-long cellophane package dramatizes the Mullane Taffy Co.'s new "Big Jim Daffy, The Foot Long Taffy." A ruler design along one side marks off in inches the 10-cent candy-bar's length. The taffy (which comes in 10 flavors) is fully visible through two-color-printed cellophane which, Mullane says, does not stick to the bar. The package is crimp sealed at both the top and bottom. Package, ABC Cellophane Co., Brooklyn.

2 Lavish in appearance for gift giving, yet practical enough to encourage repurchase were the design objectives of the Mennen Co.'s new "Citation" prestige line of premium-priced men's toiletries. The husky, squat bottles are convenient to hold and easy to handle on production lines. Eagle motif conveys Early American feeling. Colors for both label and carton are red and white, with olive green and gold. Design, Francis Blod Associates, New York. Bottle, Brockway Glass Co., Brockway, Pa. Polypropylene cap, Mack Molding Co., Wayne, N. J. Label and carton, Nevins Co., Clifton, N. J.

3 Acceptance of more sophisticated graphics is suggested by these two boxes for typewriter papers from Kimberly-Clark's full line of redesigned packages for fine printing and business papers. Each has a flip-top lid to facilitate removal of paper. Over-all identity is achieved through color-keyed fine pinstripes on a charcoal-colored background. Design program developed jointly by Saul Bass, San Francisco, and Morton Goldsholl, Chicago.

4 Dual identity is the objective of Cutter Laboratories' new Insect Repellent Cream container, designed for an ethical pharmaceutical look with "outdoor appeal." The 1-oz. polyethylene bottle—printed in orange and brown, with large white areas for an ethical appearance, and featuring a distinctive mosquito trademark—is equally suited for either drug-store or sports-shop display. Design, Walter Landor & Associates, San Francisco.

5 Tough polyethylene film bags for 10 lbs. of Mill-Pak brand potatoes incorporate a single cord drawstring for easy handling. For added strength, the drawstring hem is welded to the inside of the bag to achieve a superior bond at the point where most stress occurs when bags are filled. This feature is reported to enable rapid and efficient packing of bags on presently existing conveyor systems. Bags, Chase Bag Co., New York, using Eastman Chemical Products' Tenite polyethylene.

6 Chase Brass & Copper Co. protects its flat-rolled coil products in new trademarked paper wraps consisting of 100% unbleached Swedish sulphate. A chemical treatment of resin, rosin and wax is said to produce a "duck-back" effect as well as internal water resistance. The tan paper is 115-lb. weight, gravure printed with the Chase name in yellow and the centaur trademark in red. Paper, Merrimac Paper, Lawrence, Mass. Printing, Fitchburg Paper's Decotone Products Div., Fitchburg, Mass.



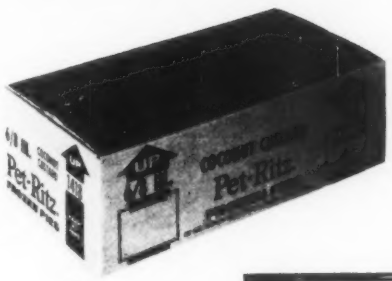
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7 A new folding box for 100 R A Poly Gloves, disposable polyethylene gloves, reduces the package size to half, while retaining its original dispensing feature. Measuring only 7 by 9½ in., it is convenient to store in desk drawer, laboratory shelf or physician's house-call bag. Box lid tapers so that, when opened, carded gloves protrude. Flaps glued inside the cover protect unused gloves. A re-order reminder is printed on top of a card that becomes visible through the last 10 gloves. Box, Disbrow Mfg. Co., East Orange, N. J.



7

8 A shipping container conforming to standards established by grocery-trade associations has been adopted by Pet Milk Co. for a frozen food—Pet-Ritz Frozen Pies. Holding six 8-in. pies, it is easy to open, with a simple push-down, pull-up top, due to the diamond design of spot gluing on the flaps covering about 35% of the area. Highly legible product identity, flavor, size and quantity appear on all four sides and the top, with adequate blank space for grocer's price, code and date marking. Size and shape make for efficient palletizing and stacking. Shippers, Packaging Corp. of America, Chicago; Crown Zellerbach's Gaylord Container Div., St. Louis, Mo.; Oxford Container, New Oxford, Pa.; American Box, San Francisco, and International Paper's Container Div., Fresno, Calif.



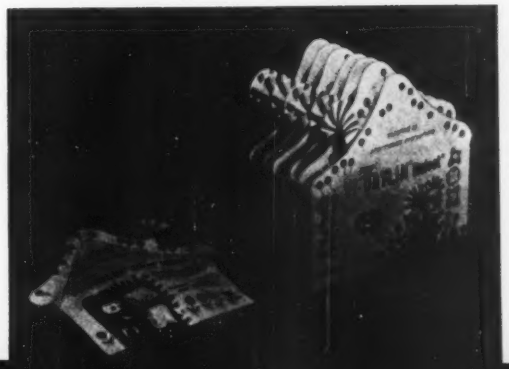
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9 A new five-ply pouch package selected to introduce Lawry's Foods' fourth flavor, Bleu Cheese, of dressing mixes for salads consists (from outer layer inward) of acetate, foil, paper, foil. The paper and inner layer of foil are joined by a polyethylene extrusion, adding another protective layer to maintain product freshness. A vinyl heat-seal coating applied to the inner foil is said to assure good sealing properties. Pouch material, Milprint, Milwaukee. Design, Tom Bodley, Beverly Hills, Calif.



9

10 Possibilities for unusual new shapes in unit packages are suggested by physicians' samples of Abbott Laboratories' Vi-Daylin Dulcet candy-flavored vitamin tablets. The film package is die cut in the shape of a fairy-tale house, designed and printed with lollypops and candy canes to appeal to children. Each packet holds two tablets and six packets are contained in a similarly designed die-cut tray. Contract packaging, Ivers-Lee Co., Newark, N. J. Trays, National Office Supply Co., Waukegan, Ill.



10

More than 1,000 packaging materials still under F&DA extension face the law's final deadline March 6.

But there is hope in new procedures for simplified, mass clearance—and a weather eye out toward Congress

Food Additives:

Time is running out on the legal moratorium under which hundreds of food-packaging materials affected by the Food Additives Amendment of 1958 have continued in use beyond the original clearance deadline of March 6, last.

After March 6, 1961, only four months from now, there is absolutely no way under the existing law in which these materials, containing chemicals which may migrate to the food contained, can be continued—unless the Food & Drug Administration has by that time given Governmental approval, under one of the three procedures which are open to it, of the various chemicals involved.

Where do we stand now?

By its own accounting, F&DA had, by Oct. 1:

- Issued one new *Regulation* (clearing polypropylene for packaging foods).
- Cleared 380 items under the category *Generally Recognized as Safe* (GRAS).
- Recognized 84 items as non-additives under the category *Prior Sanction*.

This leaves, according to F&DA, no less than 1,027 packaging items which are living only under the time extension which ends on March 6.

What are the prospects?

For the first time, it is possible to say that industry and F&DA, working together, are finding ways out of the maze. With continued diligence on the part of all interested parties in pursuing now-established channels of testing and petition, there is every hope that not a single important food-packaging material will be barred from use on the final deadline date of March 6, 1961.

From days of conference by MODERN PACKAGING editors with F&DA and with industry representatives who are now virtually camping on the F&DA doorstep in Washington, these signs of hope emerge:

- The principle of the "omnibus petition," now being utilized by the can industry for a large group of can linings, opens the way to clearance of whole areas of such materials by a single F&DA action.
- "Clearance by specification," successfully employed by Hercules Powder Co. in its trail-blazing petition for the new plastic, polypropylene, offers a vital short-cut.* Briefly, such a petition establishes specifications by which F&DA inspectors can test the packaging material itself to determine migration, rather than testing each food product in the package. This new principle is fundamental to most of the 12 packaging petitions on which F&DA is now actively working, including those for polyethylene, coated cellophanes and can linings.
- "Prior sanction" may be established before March 6 for a number of packaging items still on the "extended" list, as was done very simply on July 22 by a letter to The Society of the Plastics Industry, recognizing its claim that the much-quoted F&DA "Lehman List" of 1956 constituted prior sanction for a great many resins and plasticizers.
- Finally, F&DA concedes, privately, that it will not hesitate to go to Congress and request a *new law* giving it authority to make further extensions beyond next March 6 in hardship cases, *if* (and this is a big "if") the petitioners have been working with due diligence to provide clearance data.

Such new legislation has been publicly proposed by the Manufacturing Chemists Assn., with its application to be contingent on a finding in each case by the Secretary of Health, Education & Welfare (1) that no undue risk to public health is involved and (2) that scientific investigations are being pursued in good faith to assemble necessary data for regulations. But packagers obviously cannot count on the enactment or application of such a law in any particular case and will be well advised, in the opinion of F&DA officials, to press for positive clearance action prior to March 6.

It should be noted that in addition to the pack-

* See "A Path to F&DA Approval," MODERN PACKAGING, Aug., 1960, p. 106.

full stop ahead

aging materials, which are indirect additives, F&DA is faced with the problem of clearing nearly 2,000 direct food additives by the March 6 deadline.

Unsettled areas

The greatest number of packagers is concerned with four important types of materials which, as of this writing, are still under extensions due to expire March 6. This is their status:

Polyethylene. F&DA has said that it foresees "no difficulty" in issuing regulations prior to March 6 clearing polyethylene. The procedure apparently will follow closely the Hercules "clearance by specification" for polypropylene. Two petitions are involved: one covering polyethylene materials in all density ranges, another covering a specific high-density polyethylene and copolymers.

Waxes. An extensive test program is well under way on both paraffin and microcrystalline waxes, but there is only an outside chance that it can be completed by March 6. F&DA officials have, however, expressed satisfaction with the work being done by the wax industry and this is a likely area for further extension by Congressional action if necessary. No unforeseen questions have arisen, but time, of course, is required.

Paperboard. There is no real question about paper or paperboard made of virgin fibres. The only possible question is on re-use fibres and, here, the paperboard industry is working mightily to secure approval on the basis of controlled materials or surface coatings. Processing chemicals and coatings are to be covered shortly in an omnibus petition that is expected to clear finally most of the 135 compounds now on the extended list.

Adhesives. One omnibus petition covering 10 typical formulations has been filed that, in the view of the industry, would clear several hundred adhesive combinations for use in the packaging of dry foods. One or more additional petitions are now being formulated to cover adhesives which are used in the packaging of wet or fatty foods.

Virtually all plastic resins, other than polyethylene, as well as essential plasticizers and stabilizers, are in the clear as a result of F&DA's "prior sanction" letter of July 22. A table accompanying this article lists film resins, as well as greaseproofing and wet-strength resins for paper wraps, which have been newly sanctioned since the April listing that appeared in MODERN PACKAGING.

As for can linings, two petitions of the "omnibus" type, now under study by F&DA, are expected to clear the status of the newer enamels that are used for food cans. Most of the older linings have long since been approved by either F&DA or the Department of Agriculture's Meat Inspection Division, whose standards are respected by F&DA.

To remove any possible doubt about coated cellophanes, the industry is pressing six petitions, expected to win quick acceptance, which will clear all of the coatings now commonly applied by cellophane producers for food use.

The only other doubtful area of major importance is in rosin sizes used by the paper industry. Here, as in the case of waxes, animal-feeding studies are well under way and have been so favorable that it may be possible to file a petition on these materials before the deadline. If not, however, these are logical candidates for special extension.

The omnibus petition

Originally, F&DA demanded that each packaging chemical be cleared separately. Combinations of chemicals would require the filing of still further petitions to demonstrate the safety of the mixtures, since chemicals may interact to produce by-products which are of doubtful safety.

Such clearance procedures would have required thousands of petitions and years of work, particularly for such items as films, coatings, paper,

NEWLY ACCORDED 'PRIOR SANCTION' CLEARANCE*

Films for wrapping foods—
Acceptable resins for wrapping foods are:

- Condensate of dimethyl terephthalate and ethylene glycol
- Resins from high- and low-viscosity polyvinyl alcohol for fatty foods only
- Polyvinyl chloride
- Polyvinyl acetate
- Polyvinyl chloride-acetate
- Vinylidene chloride
- Polystyrene
- Cellulose acetate
- Regenerated cellulose
- Butadiene-acrylonitrile—synthetic rubber
- Methyl and ethyl acrylate
- Ethyl cellulose
- Rubber hydrochloride
- Polyester resins—ethylene terephthalate and ethylene isophthalate
- Butadiene-acrylonitrile-styrene
- Butadiene-styrene copolymer
- Terephthalic acid-ethylene glycol

Greaseproofing and wet-strength resins for paper wraps:

- Polymer of 2-chloro-butadiene
- Polymer of melamine-formaldehyde
- Polymer of urea-formaldehyde
- Polymer of dimethyl-polysiloxane of 350 centistokes viscosity
- Copolymer of styrene and isobutylene (for foods of high water content only)

* These resins are in addition to those listed under "prior sanction" in the MODERN PACKAGING Supplement of April, 1960. Their clearance comes from a July 22 letter from F&DA to The Society of the Plastics Industry accepting as prior sanction the F&DA's 1956 "Lehman List," excepting polyethylene.

adhesives and can linings. Hence, the importance attached to the "omnibus" petitions, such as that developed for can enamels, which lump about 300 different chemicals in a few key formulations.

The theory is that if a compound which contains a maximum amount of certain migratory chemicals is safe, then other compounds containing lesser amounts must also be safe. The can-lining petitions are said to establish the safety of these chemicals by extraction and toxicity studies, then ask for approval of all chemicals that are extractable below a certain level by standard test solvents.

While F&DA is still studying this technique, officials regard it as a practical approach with only one qualification: It may be necessary to separate the omnibus group of chemicals into those that can be mixed with each other and those that must not be included in the same compound because of their undesirable chemical interaction.

However, the omnibus technique is so attractive that it has already been applied to the new petition for clearance of adhesives and is expected to be employed in the forthcoming petition for the clearance of the chemicals used in paperboard.

Producers of wasteboard are now operating under a letter of opinion that permits such board made under unspecified "good commercial conditions" to be employed directly for dry food products, or with a "suitable"—though again unspecified—barrier coating to be used for fatty foods.

The wasteboard industry is now assembling data from three different independent research centers on extraction, abrasion and heavy-metal tests that, it is hoped, will prove conclusively the safety of these materials for use in food packaging.

To come: re-testing

Despite the generally favorable picture, it is becoming increasingly evident that March 6, 1961, will not mark the end of testing, even for many packaging materials that are now classified as "under prior sanction" or "generally recognized as safe" (GRAS). F&DA technical men, such as Dr. Arnold Lehman, L. L. Ramsey and administrator J. Kenneth Kirk, all confirm the agency's intention of re-examining many materials. Reinvestigations are expected to take years.

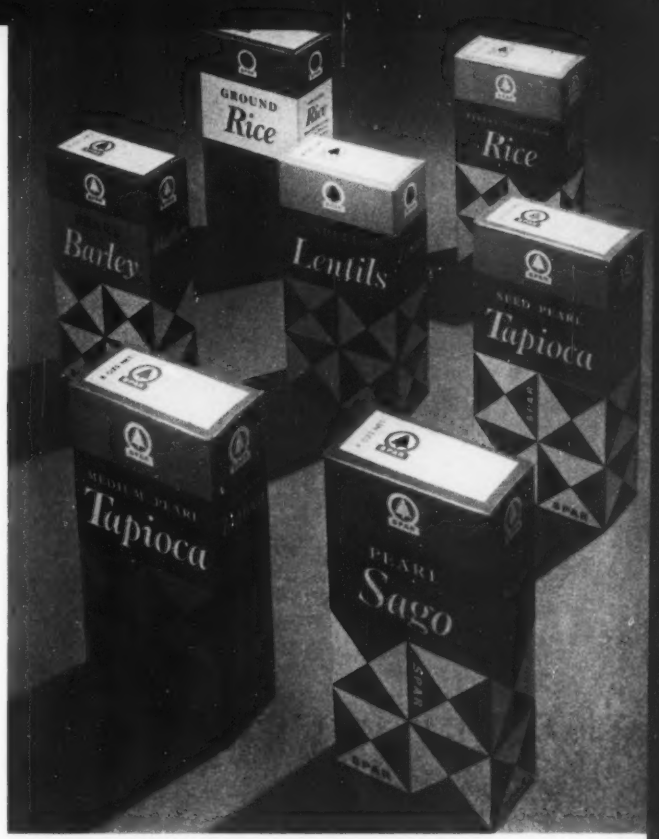
Also, the new Color Additives Amendment passed this summer may cause additional woes if products are visibly colored by a substance migrating from the package. However, no machinery for the enforcement of this law has as yet been set up.

Probably the first subject for re-testing will be the resins recently given blanket prior sanction on the basis of their 1956 approval by Dr. Lehman. F&DA officials emphasize that just calling a resin by the same name as that of an approved resin does not make it the same. Manufacturing techniques have changed, sometimes radically, since F&DA's study in the mid-1950s and the agency is firmly of the opinion that controls will have to be applied to some broad-spectrum resins. Companies in the plastics industry, seeking to forestall Governmental regulation, are already working on specifications for "food-grade" resins and Mr. Kirk, administrator at the Food & Drug Administration, says that the agency intends to look at these specifications before taking further action.

Polyethylene is about the only plastic in broad use that will be relatively exempt from re-testing in the near future, since it was removed from the Lehman list this year and will get its approval via new, formal petitions. The [*Continued on page 190*]

Designed for the times

Start-from-scratch design program for a British grocers'-alliance packages is geared to the requirements of TV as well as to the fast pace of today's self-selection buying decisions



Instant identity *of SPAR grocery products is achieved with the basic package design—a striking repeat pattern of white and colored triangles in a checkerboard motif. Triangles are color keyed to identify products. For greater legibility, product name is in bold italics on contrasting-color band.*

It isn't often that package design for a broad range of products can be started virtually from scratch, uninhibited by the need to conform to established images of brand recognition. Thus, the planning and development of just such a program for a British association of independent grocers should stir the imagination of packagers on this side of the water who may have become wrapped up in their own traditional surface design.

This overseas association, called SPAR, has a quarter-century record of success on the Continent. It was introduced into England in 1956 and now numbers a membership of 27 wholesalers servicing some 2,000 independent grocery stores in that country. SPAR's function is the same as that of similar organizations in the U. S.; it operates as a bulk buying and distribution center which enables independents to stay on a competitive price footing with the big grocery-chain outlets.

But competitive pricing alone is no guarantee of sales success. What was needed, SPAR realized, was a striking, modern package design that would:

- Unite a wide variety of self-selection grocery packages into an instantly recognizable family.
- Project an impression of high product quality.
- Be adaptable to many different container sizes, surfaces and shapes.
- Be immediately and clearly recognizable when used in mass advertising media, particularly TV.

It is a sign of the times that the requirements and limitations imposed by TV had a strong influence on the package designer's decision to aim for label simplicity and legibility, as well as for distinctive package appearance.

When SPAR handed the label-development job to the designer, its only fixed requirement was that the SPAR symbol—a green fir tree inside a red circle—appear on every package in the line.

For immediate brand recognition, a simple repeat pattern of white and colored triangles was chosen as the basic element in label design. It has been adapted to all types of container used by SPAR. Different-colored triangles help shoppers identify among such similar items as cartoned cereals. On all containers—including metal cans, glass jars and paperboard cartons—the product name always appears in large, light-colored italic type against a contrasting color band.

In this simple but distinctive design, SPAR hopes it has achieved the goals set forth. The new line of self-selection packages reportedly has won shopper approval under retail conditions at an unusual "packaging laboratory"—an experimental self-service store which the package designer operates to test consumer reaction to new packaging ideas.*

SUPPLIES AND SERVICES: Packages designed and produced by The Metal Box Co., Ltd., 37 Baker St., London, W. 1. England.

* See "Package Testing on the Firing Line," MODERN PACKAGING, Dec., 1958, p. 108.

Twin-sleeve multipack

Product protection, user convenience and a 36% saving in shelf space give J&J's break-apart two-tray package for cotton swabs new appeal to retailers as well as to consumers

Separation *of Johnson & Johnson's new paperboard twin-tray package into two convenient units is achieved simply by tearing along perforation line that joins sleeved sections. Trays are individually paper wrapped to protect contents from soilage.*



New appeal to space-short retailers as well as convenience-minded shoppers is the aim of a complete structural overhaul of Johnson & Johnson's "twin-tray" consumer package for cotton swabs. This large New Brunswick, N.J., packager of personal-care items reports that it has achieved its goal without increasing product price.

The company's new 180-count Cotton Buds package consists of two individually paper-wrapped paperboard trays in a cellophane-overwrapped paperboard double sleeve. The one-piece sleeve, which folds over so that one tray rides atop the other, is perforated for easy break-apart of the dual container into two separate 90-count units. All of the packaging operations except loading of trays into the sleeve are performed at the Johnson & Johnson plant on automatic packaging machinery.

J&J reports that the new package has met with outstanding acceptance from retailers and customers in the short time that it has been on the market. Designed by J&J packaging engineer Edward Garbus, it offers greater product protection and use convenience than the former twin-pack container (two unwrapped trays butting head to head in an elongated folding carton). Because of its fold-over construction, the double-sleeve package also takes up 36% less facing space on retail shelves—a factor which adds considerably to its appeal to dealers.

In addition to the guarantee of product freshness and protection against external soilage afforded by the individual tray wraps, says the packager, housewives reportedly like the twin pack's break-apart feature. It enables them to use one section and store the other, or to put one tray in the nursery and the other in the bathroom or boudoir.

Ease of opening has been built into the new package as an added convenience. Besides a conventional cellophane tear tape on the outer film overwrap, each of the paper tray wraps is fitted with a tear-tape opener. Convenient thumb notches which are die cut in the ends of each sleeve facilitate push-out removal of the trays.

A new surface design, which gives greater prominence to product name and to pictorialization of the cotton swabs, is the same for each of the perforation-joined sleeves. Purchase of the convenient twin package is encouraged by a band printed across the sleeves to advise shoppers that the multipack saves them 20 cents over the price of two separate 90-count packages of Cotton Buds, which are still being made available.

SUPPLIES AND SERVICES: Surface design by Donald Deskey Associates, 575 Madison Ave., New York 22. Paperboard sleeve by Brown & Bailey, 417 N. Eighth St., Philadelphia 23. Tray blanks by Container Corp. of America, 38 S. Dearborn St., Chicago 3.



"Knox solved a major packaging problem for us," says general foreman of leading distillery

"When we use Knox W-783 amber glass bottles, our label retains its neat, attractive appearance even after considerable use by the customer," says the General Foreman of one of the world's largest and most important distilleries.*

"The bottles we formerly used allowed air pockets to form beneath our gold and blue label on the neck, causing it to crinkle and tear in handling — usually the first time a customer used it.

"So, about ten months ago, we instituted a program to completely eliminate the depression on the bottle's neck. We've just finished a series of extensive tests on the new Knox bottle designed to solve this problem," he said.

*Name Available on Request

"In the initial tests, we ran through 12,500 cases of Knox Glass with almost perfect results. And the Knox bottle was particularly successful in the run through the capping machines where most bottles have trouble because of the critical tolerances of the threads.

"A further important test of the Knox bottle was the fact that it runs very successfully on our new high-speed production line.

"We put the Knox bottle to a real test — and it has met it well."

See what the new/Knox Glass can do to meet your packaging needs. Contact Knox Glass, Inc., Knox, Pa., or any one of 37 sales offices.

the new/**KNOX GLASS**

COM

Du Pont's new 2in1 polyethylene gives you clarity and toughness in a single film

This is it! The polyethylene film specifically designed for bag packaging that gives you both clarity and toughness . . . Du Pont's exclusive new 2-in-1 polyethylene film.

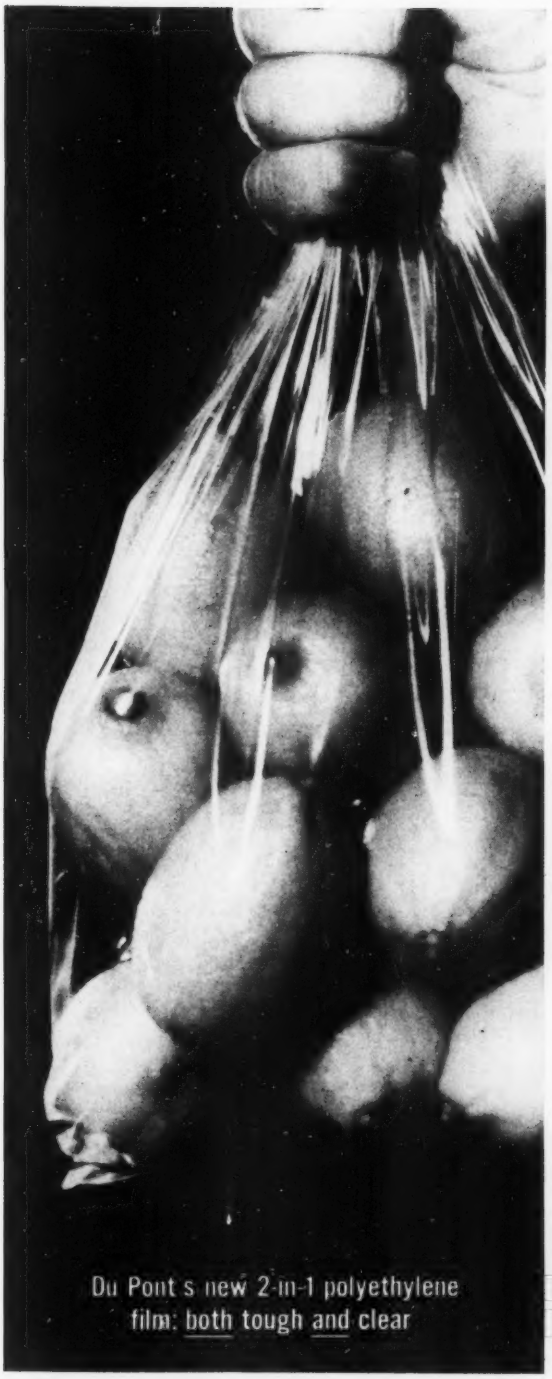
Compare it with the clearest polyethylene bag films you can buy today. You'll find it's just as clear. Compare it with the tough polyethylene bag films. You'll find that only the hazy, high-impact polyethylene films are as rugged.

Where can you get it? Du Pont 2-in-1 polyethylene film is now available in printed roll stock and bags through Du Pont Authorized Converters . . . or plain roll stock from your Du Pont Representative. Call an Authorized Converter or Du Pont Representative for all the facts on this latest advance from Du Pont . . . leader in packaging film for 35 years. Du Pont Company, Film Dept., Wilmington 98, Del.

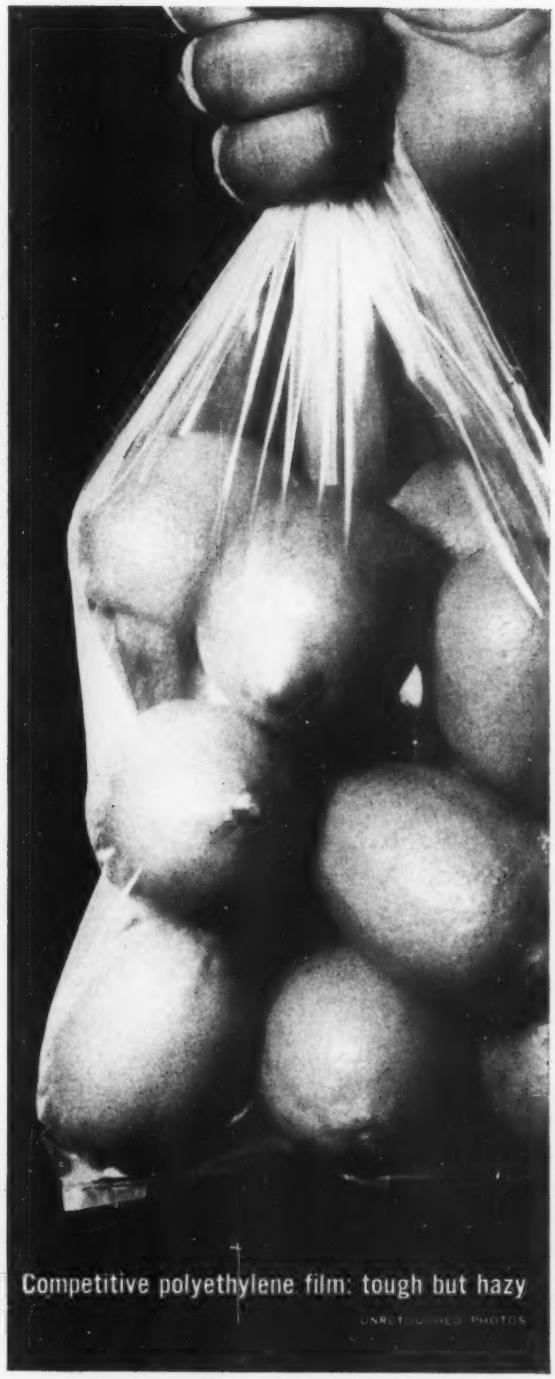
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DU PONT polyethylene film

PARE

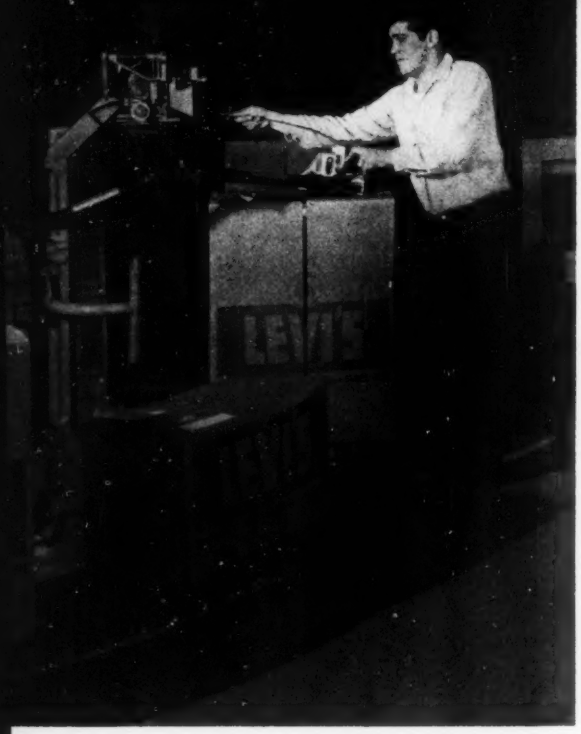


Du Pont s new 2-in-1 polyethylene film: both tough and clear



Competitive polyethylene film: tough but hazy

UNRETOUCHED PHOTOS



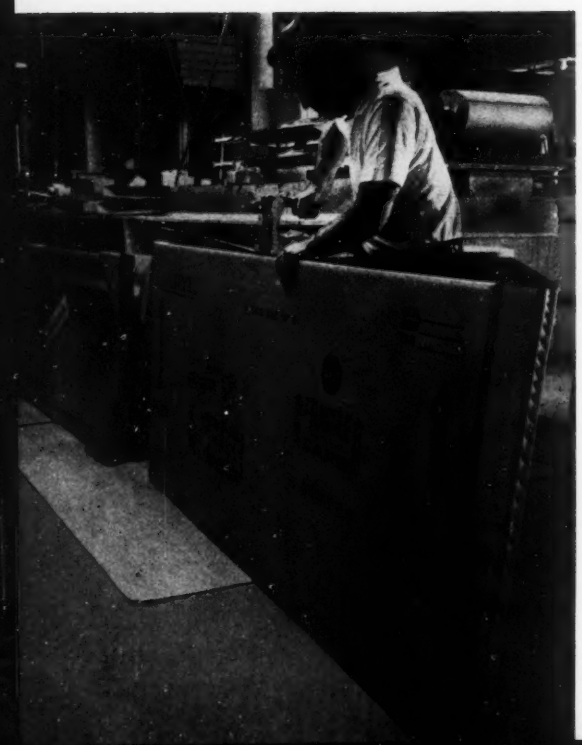
Breaking a bottleneck

A 55% increase in production at a significant saving in manpower and in floor space is the performance reported by Levi Strauss Co., San José, Calif., since adopting a battery of semi-automatic machines for applying steel strapping to random-size corrugated shipping containers for Levi overalls. The story should interest other companies which may be experiencing production bottlenecks at the end of the line.

The two strapping machines now used by the company are located at the ends of newly installed powerized floor conveyors. Because each unit automatically feeds, applies and seals the proper length of strapping required by the varied sizes of shipping container used by Levi (12 by 24 by 18 in. to 38 by 40 by 12 in.), cases fed in random size no longer present a problem. According to the packager, one man can strap 700 cartons per day.

Levi's former manual carton-strapping operation required two men. Strapping was performed on mobile carts (30 of which were needed to keep pace with production). And daily output totaled only 440 strapped cartons, says the packager. *Model PSF-1 steel-strapping machines by Signode Steel Strapping Co., 2600 N. Western Ave., Chicago 47.*

COST



Engineered for new economy

The combined packaging-engineer forces of Daryl Industries, Miami, Fla., and of its package-supplier company have developed a lightweight and protective all-corrugated shipping container for aluminum-and-glass sliding doors. Since adopting the new shipper to replace a steel-banded wooden container formerly used, Daryl estimates that it has halved its material and labor costs while achieving a substantial reduction in shipping costs because of the weight savings afforded by corrugated.

The company also reports that the 350-lb.-test, double-wall corrugated shipping carton has proved entirely successful in transporting the breakable glass doors safely to market, even over long distances.

For in-package protection against handling and shipment shocks, the door is first fitted with four triangular corner pads, also made of corrugated. The unit is then inserted into the snug-fitting carton, which is sealed by stapling. Daryl points out that shipper assembly and closure, formerly a two-man job, now is accomplished quickly and easily by a single worker. *Shipper and corner pads by Owens-Illinois Glass Co., Paper Products Div., Toledo 1, O.*

Unit packs at 50% saving

Worth attention by other companies interested in large-scale unit- or sample-packaging operations is the story of how The J. R. Watkins Co. has cut its packaging-material and labor costs by more than 50% while virtually eliminating a former problem of container leakage and breakage. This Winona (Minn.) producer of foods, drugs, cosmetics and other items has long depended on sample packaging to introduce new products and win new customers.

Rising costs and slow production speeds reportedly forced the company to discontinue the miniature glass bottles it has traditionally used for sample packaging. In their place, Watkins has adopted flexible packaging materials (mainly tough polyester film) which are formed into pouches, filled and sealed on an automatic machine at reported speeds of up to 10,000 units per hour. The web-fed film is formed into as many as four individual or strip-joined pouches at a time by the machine, which accommodates liquid or powdery products. Even at high production speeds, says the packager, pouch seals are leakproof. *Bell-Pak pouch former-filler-sealer by Bell Machine, Oshkosh, Wis. Scotchpak polyester film by Minnesota Mining & Mfg., 900 Bush Ave., St. Paul 6.*



CUTTERS

Low-cost blend of old and new

A combination of the old (corrugated board) and the new (polyurethane foam) in protective materials is reported to be saving the Donner Scientific Co. of Concord, Calif., 55% in the over-all cost of packaging fragile and expensive electronic instruments for shipment. It is another example of how today's more versatile packaging materials can give effective, low-cost protection to the most delicate products.

The company formerly packaged its electronic Wave Analyzer in an outer and an inner corrugated shipping carton. This double pack, which also required 12 pieces of interior corrugated cushioning, took 30 min. to set up and had a tare weight of 10½ lbs. But now the company reports it is achieving protection in a single carton with two pieces of cushioning. Set-up time has been cut to 3 min. and tare weight to 7¼ lbs. The secret is in the cushioning: an upper and a lower pad each consisting of two strips of resilient polyurethane foam glued to sheets of double-wall corrugated. The pads float the instrument to protect it from shock damage on all sides. *Shipper by Tharco Containers, Oakland 6, Calif., using polyurethane by R. M. Bracamonte, 160 Spear St., San Francisco, and American Latex Products, Hawthorne, Calif.*





"Put it in plastic," say 9 out of 10 customers!

The American Dairy and Kent Plastics of Evansville, Indiana wanted to know if people really noticed or cared about the type of package a product comes in. So they gave new, sample plastic containers full of cottage cheese to over a hundred consumers. These packages were vacuum-formed with DYLENE® polystyrene.

Follow-up interviews showed that 93% of the people preferred plastic to paper containers. They said that lightweight plastic containers were easy to stack, easy to open and reclose. They said the containers didn't soften, and left no odors or taste. They were impressed with the attractive pastel colors, and printing on the lid. Many people served from the container rather than transfer the contents to a dish. Others found the easy-to-wash, reusable package ideal for left-overs and freezer dishes.

Economical, hi-impact DYLENE polystyrene has a hard, glossy finish; it won't chip or flake. Containers molded of DYLENE are suitable for automatic filling and capping equipment. DYLENE is dimensionally stable, comes in a wide range of eye-appealing colors. Consider DYLENE polystyrene for your next packaging application. Koppers also makes these other fine plastics for packaging: DYLAN® polyethylene, SUPER-DYLAN® high-density polyethylene, and DYLITE® expandable polystyrene. For more information, write to Koppers Company, Inc., Plastics Division, Dept. MPG 110, Pittsburgh 19, Pa.

KOPPERS PLASTICS

Technical & Engineering

Charles A. Southwick, Jr., *Technical Editor* Robert J. Kelsey, *Engineering Editor*

Copolymer-film shipping bags

Use testing of special polyethylene resin indicates performance at 5- to 7-mil thickness equalling or exceeding that of 10-mil low density, with favorable economics.

By R. J. Martinovich and Robert Doyle†*

In the spring of 1958, low-density polyethylene bags made headlines as a replacement for 50-lb. multiwall paper bags (1, 2)[1]. Since then, there has been a rapidly expanding application for these polyethylene film containers, especially for use in the shipment of nitrate fertilizer and polyethylene pellets.

However, as is characteristic of the plastics industry, it was inevitable that further developments and improvements would follow. All-plastic bags for bulk shipments had long been the dream of the film men. Seeking to improve the competitive position of polyethylene bags for bulk shipping, the full range of polyethylenes and later the ethylene copolymers were studied. Out of this work, there emerged a modified ethylene copolymer with such outstanding toughness that tubular film bags constructed with a 5- to 7-mil film thickness were found to be equal to or even better in performance than the original low-density polyethylene bags with a 10-mil wall.

This new resin, now known as TR-101 (TR for "tailored resin"), was subjected to an additional year of intensive testing in the laboratory, in production bagging equipment and in actual boxcar shipments. As described in the following sections, this testing has substantiated and confirmed even the more optimistic predictions for this new resin. Bags from TR-101 are ideally suited for and competitive with other 50-lb.-capacity sacks where moisture or paper-fibre contamination have previously been problems. While most efforts to date have been concentrated on this one, large market, lighter pouches, heavier bags, drum liners, tarpaulins, overslip protection for bagged produce which is refrigerated in transit, and other similar applications all have

* Supervisor, Evaluation and Compounding, and †Supervisor, Extrusion, Calendering and Thermoforming, Sales Service Laboratory, Phillips Chemical Co., Bartlesville, Okla.

[1] Numbers in parentheses identify References appended.

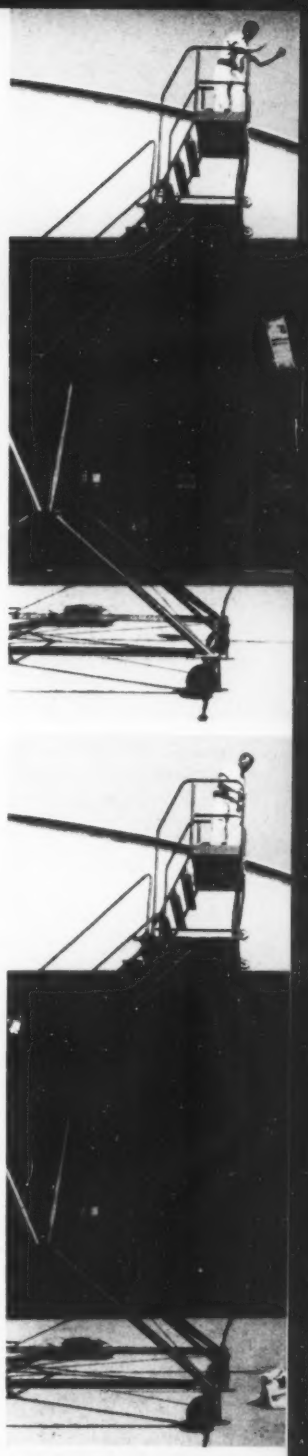




Figure 1. *Sequence of three views showing 6-mil TR-101 ethylene copolymer-film bag, containing 50 lbs. of ammonium nitrate, dropping from a height of 26 ft. without failure.*

engendered an equal amount of interest and enthusiasm. The following is an account of the testing and evaluation of this new film resin which has been accomplished to date. In addition, extrusion, treating and sealing procedures are described, the current economic picture is discussed briefly and, finally, a list is offered which indicates some of the many products which might be packaged in film extruded from the new copolymer resin.

Physical properties

The general properties of TR-101 resin are listed in Table I. It is to be noted that, although the nominal density of this material is 0.940, it possesses characteristics usually not associated with a resin of this density. The reason for this is that TR-101 is a tailored resin and, consequently, the generally accepted relationship between density and resin performance do not apply. In general, TR-101 film is characterized by exceptional toughness and impact strength. Other desirable properties of the film include good low- and high-temperature properties and excellent handling characteristics.

Table I: Comparative physical properties of TR-101 and low-density polyethylene

Property	*Units*	*ASTM test method*	*Low-density polyethylene*	*Marlex TR-101*
Density	gms./cc.	D1505-57T	0.920	0.940
Melt index	gms./10 min.	D1238-57T	1.5-2.5	0.15
Tensile strength	p.s.i.	D412-51T	2,150	1,900
Elongation	%	D412-51T	650	40
Modulus in flexure	p.s.i.	D790-49T	21,000	50,000
Impact strength		D256-56	16	16
Vicat softening	°F.	D1525-58T	215	253
Brittleness temperature	°F.	D746-55T	−105	−93
Environmental stress cracking	F_{50} hrs.	D1693-59T	20-200	1,000

Although it is possible to obtain a good indication of the characteristics of a resin from its physical properties, it is not always possible to translate these characteristics to a specific application. For this reason, a knowledge of the end-use properties is essential before one can evaluate the performance of a new resin for a particular application. This is especially true in film, where the extrusion conditions can significantly affect the over-all performance. Table II provides a comparison between the film properties of 6-mil TR-101 blown tubing and 10-mil conventional polyethylene blown film. It will be noted that the elongation values of TR-101 film are approximately 25% higher than those for conventional polyethylene film. In addition, TR-101 has 40% higher tensile strength.

Since the area under the stress-strain curve is a function of toughness, it follows that TR-101 film will exhibit a higher degree of impact strength than low-density polyethylene film. This is borne out by actual impact tests. From Table II it can be seen that falling-ball impact values for TR-101 film are approximately three times those of conventional film. In addition, free-falling dart tests indicate that 6-mil TR-101 film has impact-failure weights of 730 grams. This is approximately 50% higher than the 480 gms. required in the new National Classification Board Specification for 10-mil conventional polyethylene bags. It should also be noted that even the 5-mil TR-101 film has a dart-impact-failure weight of 630 gms., which is still 30% higher than the minimum specification.

Besides the above impact tests, hundreds of TR-101 bags have been filled with 50 lbs. of either Marlex[2] pellets or prilled ammonium nitrate and dropped from various heights onto a concrete floor. The wall thicknesses tested included 5, 6 and 7 mil, in anticipation of a range of applications. Regardless of whether a bag was dropped on the sealed end or the side, TR-101 bags of all three thicknesses consistently passed a 14-ft. drop. This may be compared with Interstate Commerce Commission Specification 44-B for multiwall bags (and similar ICC specifications), which specify a minimum drop of only four feet. Seven-mil TR-101 bags have successfully passed this same drop test from heights

Table II: Comparative film properties

Property	*ASTM or other test method*	*Low-density polyethylene*	*Marlex TR-101*
Thickness, mils		10	6
Density, gms./cc.	D1505-57T	0.920	0.938
Tensile strength, p.s.i.	D882-56T		
Machine direction		2,300	3,200
Transverse direction		2,400	3,000
Elongation, %			
Machine direction		520	700
Transverse direction		520	700
Modulus of elasticity, p.s.i.	D1530-58T	21,000	45,000
Elmendorf tear, gms./mil	D689-44		
Machine direction		100	150
Transverse direction		150	300
Burst strength, ft.-lbs.	Falling ball*	6.9	18.4**
Free-falling dart Weight to F_{50} Failure, gms.	Monsanto dart-drop test	610	730
Actual WVT rate gm./100 in.²/24 hrs. at 100 F. and 95% RH	E96-59T	0.13	0.12
Gas permeability	Modified Brubaker		
cc./mil O_2	& Kammermeyer	535	200
100 in.²/24 hrs. CO_2	apparatus	1,501	540
Greaseproofness, hrs. to fail	Mil-B-121	9	17.5

* Using free fall of 2.3-lb. steel ball, 2.5 in. in diameter, height from which ball first passes entirely through sample is determined. Film sample is held in circular clamp with 8-in. I.D. open area.

** Ball did not pass through at maximum height (8 ft.) of test stand.

[2] A trademark for Phillips family of olefin polymers.

of up to 26 feet. This is illustrated in Figure 1.

It should also be noted that in repeated tests on the same bag, 5-mil bags have withstood up to 50 drops (the maximum number attempted) from a height of 10 ft. without a failure. In contrast, four-ply, 50-lb. multiwall paper bags failed between 4 and 6 ft. when dropped the first time from that height onto a cement floor.

Drop-impact tests were also conducted on TR-101 bags which had been filled with 50 lbs. of resin and aged for 24 hrs. in a cold room maintained at 32 deg. F. These tests revealed again that 6-mil TR-101 bags would consistently pass a minimum requirement of a 14-ft. drop test.

An important requirement of packaging materials is the ability to act as an effective water-vapor barrier (3). Comparing the water-vapor transmission values of various materials now being employed for industrial bags, it can be seen from Figure 2 that TR-101 film offers superior protection. The same holds true when comparing oxygen and carbon-dioxide-gas transmission values of TR-101 and conventional polyethylene film (see Table II).

Another example of the good barrier properties of TR-101 as compared with low-density polyethylene may be seen in Table III. Here data are presented for the weight loss of various materials in 4-oz. bottles after a three-month shelf life. TR-101 exhibited the best barrier properties in all cases.

Closely related to barrier properties is the resistance of a plastic material to chemical attack. Table IV shows the tensile properties of samples after having been exposed for three months at 80 deg. F. to a variety of chemicals. These data indicate that TR-101 is, for the most part, resistant to a wide range of corrosive environments. In addition, greaseproofness values, as determined by the Mil-B-121 method, indicate that 6-mil TR-101 film is approximately two times as grease resistant as 10-mil conventional polyethylene film (Table II).

Field evaluation

With the performance of TR-101 film amply demonstrated in the laboratory, the next step was to obtain some indication of how it would perform in actual commercial shipments. TR-101 bags were employed for bagging and shipping ammonium nitrate. Approximately 80 rail shipments and a number of truck deliveries were made prior to April 1 of this year.

The preparation of these shipments, incidentally, provided an excellent test of the superior stacking characteristics of the TR-101 bags during storage and palletized handling. Freight-car loadings of 30 to 50 tons were made from Dumas, Tex., to locations as far away as New England, with others

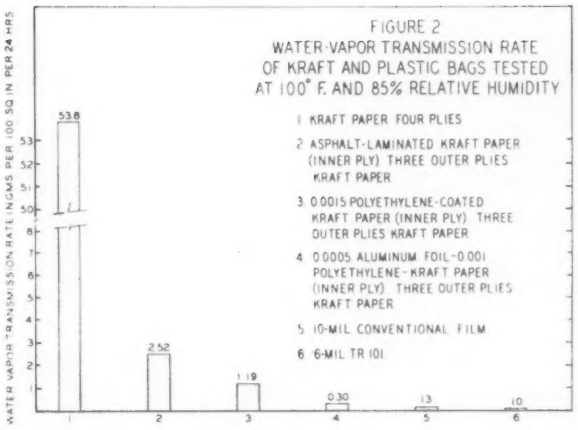


FIGURE 2
WATER-VAPOR TRANSMISSION RATE OF KRAFT AND PLASTIC BAGS TESTED AT 100° F. AND 85% RELATIVE HUMIDITY

1. KRAFT PAPER FOUR PLIES
2. ASPHALT-LAMINATED KRAFT PAPER (INNER PLY) THREE OUTER PLIES KRAFT PAPER
3. 0.0015 POLYETHYLENE-COATED KRAFT PAPER (INNER PLY) THREE OUTER PLIES KRAFT PAPER
4. 0.0005 ALUMINUM FOIL-0.001 POLYETHYLENE-KRAFT PAPER (INNER PLY) THREE OUTER PLIES KRAFT PAPER
5. 10-MIL CONVENTIONAL FILM
6. 6-MIL TR 101

going to the Middle Atlantic States and along the Canadian border. The results of the 1960 shipping tests are summarized in Table V.

Although not indicated, it is worth noting that shipping damage, aside from closures, has remained relatively constant through the 1959 and 1960 period. However, closure failures have been reduced from an average of 0.92% in 1959 to approximately 0.31% in 1960. According to our field information, a breakage factor of about 1% is common with other types of shipping bags currently being used throughout the industry.

In addition to the above, our shipping tests also demonstrated that breakage can be significantly reduced by proper attention to:

1. *Car preparation.* Floors and walls should be lined, nails or residue from previous shipments should be removed, etc.

2. *Stacking.* Bags must be closely packed. To accomplish this, the bags may have to be vented with a minimum number of pinholes to release entrapped air. Alternately, the amount of air in the bags from the filling operation might be controlled to a low, but uniform content.

3. *Good seals.* The operator responsible for filling and sealing on the production line must be carefully trained in good-sealing practices and fully "sold" on the importance of holding strictly to these practices. The importance of good-sealing practices cannot possibly be emphasized too strongly.

Economics

With the recent 8% increase in the price of multiwall paper bags, 5-mil TR-101 bags are now competitive with polyethylene-coated multiwall paper bags for industrial packaging applications. Moreover, based on current resin prices, 6-mil TR-101 bags are now being quoted at approximately

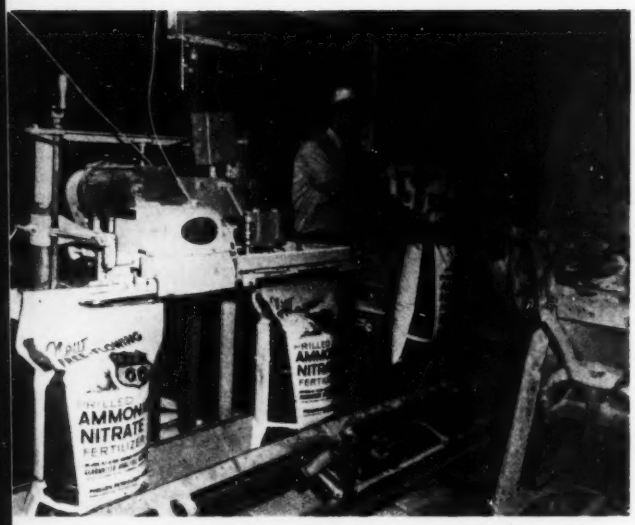


Figure 3. *Filling 6-mil bags made from copolymer resin with 50 lbs. of ammonium nitrate in a commercial bagging operation.*

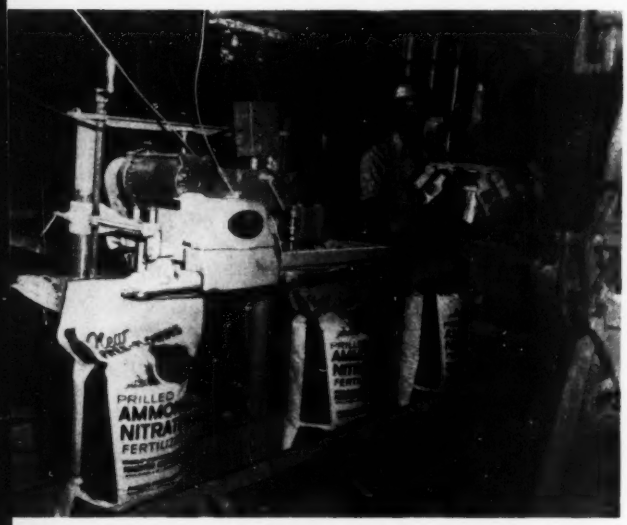


Figure 4. *Operator excludes air and closes the mouth of the bag preparatory to heat sealing on a band-type sealer.*

12% less than conventional polyethylene bags. In addition, there are other definite cost savings which can be realized through the use of TR-101 film. As shown in Table VI, a 6-mil TR-101 bag weighs less than $\frac{1}{3}$ as much as a multiwall paper bag and about $\frac{2}{3}$ as much as a conventional polyethylene bag. In a standard 40-ton carload shipment, this amounts to an 850-lb. saving over kraft and 240 lbs. over conventional polyethylene bags. In addition, as can be seen from Table VII, one-half to two-thirds less space is required to ship and store the same number of TR-101 film bags prior to use.

Extrusion

The blown tubing used to develop and prove out the TR-101 bags discussed above was extruded, initially, on the 2½-in. extruder installation described fully elsewhere (4). For those who may not have this reference handy, a brief summary of the extruder installation and extruder conditions is offered here.

The extruder, die and cooling tower were all stock equipment purchased from well-known American manufacturers. The barrel had a length/diameter ratio of 20/1 and the screw was a 4/1 channel-depth ratio, tapered, polyethylene metering screw. A simple 20/30/20 mesh screen pack was employed. The best die for 18- to 19-in. widths, of

Table III: Weight loss of materials in 4 oz. Boston round bottles* expressed as weight per cent loss per year** at 80 F.

Test material	*Low-density polyethylene*	*Marlex TR-101*
Nitric acid (70%)	0.4	0.09
Ethyl alcohol	3.1	2.5
Sulfuric acid (98%)	+0.1	+0.03
Benzene	900	800
Water	0.40	0.25
Phosphoric acid (85%)	+0.07	+0.02
Sodium hydroxide	0.05	0.02
Ammonium hydroxide (28%)	11.7	9.1
Amyl acetate	38.9	21.5
Methyl salicylate	15.3	7.0
Acetone	14.8	7.6

* The thickness of these bottles was approximately 0.033 in.
** Estimation based on data obtained after three months.

Table IV: Ultimate tensile properties after three months' storage at 80 F.

Test material	*Low-density polyethylene* *Tensile*	*Elongation*	*Marlex TR-101* *Tensile*	*Elongation*
Air (control)	2,150	650	1,850	40
Nitric acid (70%)	2,020	580	1,730	51
Ethyl alcohol	2,160	650	1,634	32
Sulfuric acid (98%)	2,250	650	1,700	66
Benzene	1,890	600	1,430	32
Water	2,170	620	1,800	40
Phospheric acid (85%)	2,040	600	1,732	72
Sodium hydroxide	2,250	650	1,680	38
Ammonium hydroxide (28%)	2,110	650	1,800	59
Amyl acetate	1,850	600	1,520	37
Methyl salicylate	1,820	570	1,550	122
Acetone	2,150	620	1,750	36

those available, was a 4-in.-diameter die with a 0.020-in. die opening. Ideally, the die should be fully streamlined so that there are no areas of stagnation. In addition, it was found that it was important to observe the following:

1. Stock temperatures should be in the range of 420 to 460 deg. F.

2. A moderate to high blow-up ratio will give the best physical properties. A 1.2/1 ratio (final tubing diameter/die diameter) is probably a minimum for best results and about 2.5/1 is preferred.

3. Pinch-roll pressures atop the cooling tower should be held to an absolute minimum in order to obtain maximum crease strength.

4. Good gauge control is essential if optimum film properties are to be developed at the lowest possible film thickness. Good gauge control is also vitally important for good heat-sealing results.

After it was proved in our laboratory that TR-101 could be successfully extruded into blown tubing, arrangements were made for the purchase of large quantities of tubing and bags from commercial extruders and converters to ascertain whether any difficulty with these bags would be experienced in the field. The experience of these commercial extruders, using a range of equipment, again demonstrated that TR-101 can readily be extruded into quality tubing provided only that ordinary good practices are maintained and that the above four points are conscientiously observed.

Treating and printing

Three- or four-color printing is conventionally used on many ammonium-nitrate fertilizer bags. Hence, all of the bags previously mentioned in the rail and truck shipments were both treated and printed. Standard polyethylene techniques were employed and no special problems were encountered. Either flame treating or any of the electrical treating processes were satisfactory. In fact, it has been repeatedly demonstrated that only the lightest electrical treatment is required to give excellent ink adhesion to film made from TR-101 resin. Flexographic printing was used in all instances. The inherent translucent white appearance of TR-101 film, while permitting a very adequate identification of bag contents, also provides an excellent background for bright, flexographic inks.

Sealing

Because TR-101 resin has a higher softening temperature than conventional polyethylene, somewhat higher heat-sealing temperatures are required. Normal sealing temperatures will be in the range of 275-350 deg. F., depending on the type of sealer employed. Heat sealing of industrial TR-101 bags has been done commercially using three basic types of equipment: impulse, rotating band, hot bar.

The impulse sealer is recommended for thin-gauge TR-101 film. This sealer should be completely adjustable as to heating time, dwell time and pressure in order to obtain satisfactory seals. In general, seals should be made at the lowest temperature and pressure that will produce acceptable seals. In addition, the cycle should be as long as possible. Specific conditions must be determined for each individual sealer because of differences in equipment. Once the proper conditions have been found, excellent sealing of TR-101 film can be accomplished at modest rates with an impulse sealer.

Rotating band sealers provide the best heat seals on moderate- to heavy-gauge TR-101 film. Temperature range of 300-350 deg. F. is usually employed, depending on the speed and equipment. In addition, the pre-set band spacing should be 1 to 2 mils less than the combined thickness to be sealed.

The most rapid in-line seals, but the weakest, are obtained on hot-bar sealers. Temperature, pressure and dwell time should be maintained at a minimum consistent with producing acceptable seals.

The fact that good heat [*Continued on page 206*]

Table V: Summary of shipping results of Marlex TR-101 plastic bags, January through April, 1960

Bage size	*No. of cars*	*No. of bags*	*No. of bags damaged*	*% Damage**
7 mil x 50 lbs.	51	70,485	802	1.17
5 mil x 50 lbs.	2	3,200	15	0.47

* Approximately 1/3 of the damage was due to top heat-seal failures, while the remaining 2/3 of the damage reported was from punctures. It should be noted that all punctures were counted, regardless of size or shape.

Table VI: Comparative bag weights

Bag material	*Nominal weight, one bag*
Four-ply polyethylene-coated kraft paper	350 gms. (0.772 lbs.)
10-mil low-density polyethylene	170 gms. (0.375 lbs.)
7-mil Marlex TR-101 film	125 gms. (0.275 lbs.)
6-mil Marlex TR-101 film	108 gms. (0.240 lbs.)
5-mil Marlex TR-101 film	93 gms. (0.220 lbs.)

Table VII: Comparative film volumes

Bag	*Thickness of stacked flat bag*
Four-ply polyethylene-coated kraft paper	4 in./100 bags
10-mil low-density polyethylene film	2 in./100 bags
7-mil TR-101 film	1.4 in./100 bags
6-mil TR-101 film	1.2 in./100 bags
5-mil TR-101 film	1 in./100 bags

*By J. D. Winter and Shirley R. Trantanella**

Requirements of frozen foods

A comprehensive review of the effects of packaging materials on palatability of products under varying storage conditions, with an extensive bibliography

Although the freezing of meats and other foods by consumers in the United States began as early as 1908, it was not until about 1936 that wrapping materials made especially for the packaging of frozen foods became available.

Permeability of the packaging materials to water vapor was of first concern to both manufacturers and users, because of the effect of water loss on the appearance and weight of the frozen product.

However, the final acceptability of foods depends, to a large extent, on retention of their characteristic flavors. Many of the undesirable flavor changes that take place in meats and poultry during storage at low temperatures are attributable to reactions between unsaturated fats and atmospheric oxygen, as discussed in a comprehensive review by Watts (37)[1]. Appreciable losses of oxygen and corresponding increases in carbon dioxide have been found to occur in the atmosphere of sealed metal containers used for the storage of frozen poultry, indicating an uptake of oxygen by the fat (19, 39).

The need for protecting "flesh products" from atmospheric oxygen was recognized as early as 1929 by Birdseye (5). The fact that storage conditions which reduce exposure to oxygen could be used with some success to prolong the palatability and storage life of meats was cited by Lea (20) in 1933. Tarr (34) mentions that a Dutch patent was taken out in 1929 to prevent the spoilage of fatty fish by storing it in metal containers at low temperatures in the absence of oxygen. Several years later, others also called attention to the need for protecting frozen foods from atmospheric oxygen.

Nevertheless, most of the earlier packaging studies and even some of the more recent ones were not concerned with the rate of permeability to oxygen of the packaging materials used.

In 1949 highly significant differences were reported in palatability of ground beef stored at zero deg. F. (minus 17.8 deg. C.) for periods up to seven months under atmospheres containing low, normal and high concentrations of oxygen, with scores decreasing in that order (32). In 1952 it was shown that the flavor of frozen ground beef and pork was most desirable after storage for 10 months when the products were packaged with the least surface area of meat in relation to volume (43).

Even in vegetables it has been found that rancidity of fat content (lipid fraction) is a dominant factor in the development of off-flavor in frozen, unblanched peas (21, 23). Sweet corn was the only adequately blanched frozen vegetable found by Lee (22) to show changes in the lipid materials during storage. However, cooked frozen peas were found to deteriorate at a faster rate when held in a loose pack than they were in comparison with cooked peas frozen in a sauce (12).

A comprehensive description of modern flexible packaging materials is given by Ball (2). The fact that the character of packaging materials used may affect retention of desirable flavor or palatability is now well authenticated in many of the studies cited in this review. The foods involved in these studies include beef, pork, fish, shellfish, fruits such as cherries and strawberries, bread, sponge-cake and asparagus.

Palatability in relation to oxygen permeability. It is apparent that the protective requirements of the many individual frozen foods are not yet well understood. The need for such information has been pointed out by Klein (16) and others. This is especially true with respect to permeability of packaging materials to oxygen.

In recent studies at Minnesota with beef, ground pork, bacon, Lake Superior herring and strawberries (42, 46, 48, 49, 50, 51, 53, 54) significantly higher palatability or acceptability scores were as-

*University of Minnesota, Institute of Agriculture, St. Paul, Minn. This is Paper No. 4414, Scientific Journal Series, Minnesota Agricultural Experiment Station.

[1] Numbers in parentheses identify References appended.

sociated with the use of packaging materials of relatively low permeability to oxygen except in two experiments where high-density (0.950) polyethylene film was used (51, 53). The reason for this apparent inconsistency is not clear, although it suggests that the standard permeability tests for high-density polyethylene may not be valid for the particular conditions under which these two recent studies were conducted.

Studies elsewhere (4, 13, 14, 31) show that the greatest deterioration in frozen seafoods has been found when they are packed in containers that provide the least protection from air. With beef, lamb and pork it has been found that increases in the peroxide values of the fat seem dependent upon the oxygen permeability of the package (7).

Banks (3) has shown that thin films of ice are almost impervious to oxygen at low temperatures. Early in the 1900s a Duluth, Minn., fish dealer shipped fish frozen in cakes of ice and advertized the product as fish "frozen with the wiggle in their tails" (15). Glazing of the product before packaging in plastic films has been found superior to packaging in certain heat-sealed plastic-film bags for storage of peeled shrimp (9). Many other investigations conducted in both Europe and North America confirm the protective qualities of an ice glaze provided the glaze remains intact.

On the other hand, no major differences in palatability scores attributable to differences in packaging materials for the storage periods involved have been reported for chickens, turkeys, chow mein containing pork, and sweet corn when the products were stored at temperatures normally used for frozen foods (8, 17, 25, 39, 44, 47, 52, 54). The materials used in these studies differed widely in permeability to oxygen, but all were relatively low in permeability to water vapor. It should be noted that the chow mein was covered with a thickened liquid which presumably afforded protection from atmospheric oxygen in addition to that provided by the packaging materials themselves.

However, other studies with ready-to-cook cut-up chicken (19) and with turkey steaks and half-turkeys (18) indicated differences in palatability scores attributable to differences in packaging, under the conditions of these two studies. The former study included the use of widely different packaging materials. The packaging used in the latter study included aqueous gelatin coatings.

Rate of oxygen permeability. Studies with frozen pork (53), in which packaging materials of known oxygen permeability were used, indicate that a very low rate of permeability is desirable. The permeability rates were determined for moist 0_2 in cc./24 hrs./100 sq. in. at 23 deg. C. (73.4 deg. F.). The palatability scores for ground pork sealed in film having a permeability rate of 1.0 (300-PT cellophane coated on both sides with 3.0-mil polyethylene) were significantly higher than those for comparable lots sealed in films of 7.5, 23 and 175 permeability. The latter films were 300-PT cellophane coated on both sides with 0.3-mil polyethylene, a 2-mil vinyl film and a 3-mil polyethylene, respectively. There were no significant differences in palatability scores of the ground pork between samples sealed in the films having permeability rates of 7.5 and 23, or between samples sealed in films of 23 and 175 permeability.

Similarly, the palatability scores for frozen beefsteaks sealed in packaging having a permeability rate of 1.18 to 3.62 (1-mil Mylar polyester film coated on one side with 1-mil polyethylene) were significantly higher than those for comparable lots sealed in polyethylene-coated kraft paper of 194 to 208 permeability (51). There were no significant differences in palatability scores of the beefsteaks between samples sealed in two films of 1.18 to 3.62 and 6.04 to 6.49 permeability. The latter consisted of 2½-mil Scotchpak polyester film Type A.

On the other hand, there were no significant differences in the palatability scores of frozen turkey fryer-roasters stored for 7½, 10½ and 12½ months when sealed in packaging films ranging from 3.3 to 151.4 permeability (54).

Palatability in relation to water-vapor permeability. Excessive weight losses (5% or more) have been cited as a major cause of quality deteriora-

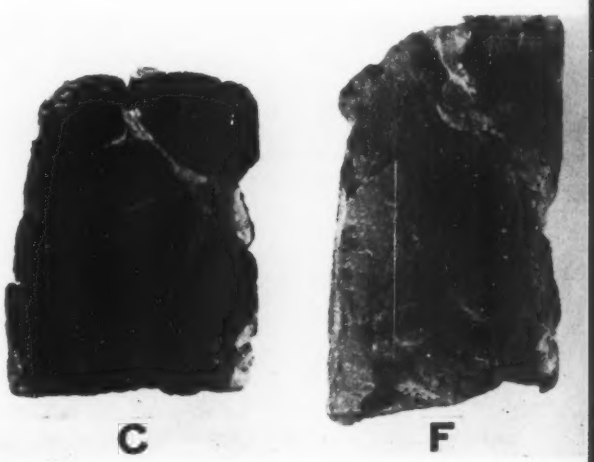


Figure 1. *Loss of moisture (desiccation) in itself is not a good criterion of palatability loss in frozen meat during storage. Weight loss of Sample F was 10.7%, while that of Sample C was negligible, but both of the samples were low in palatability.*

tion. Nevertheless, it has been found (6, 19, 26, 32, 36, 38) that the rate of moisture loss itself does not necessarily constitute a competent criterion of rate of palatability loss during storage. Heerdt in 1955 (13) strikingly demonstrated the inadequacy of ordinary water-vaporproof films in keeping air away from frozen fish fillets and steaks which were wrapped according to prevailing practice.

In recent studies at Minnesota (42, 46, 48, 49, 53) significant differences in palatability were found among samples of frozen beef, pork and fish packaged in materials of relatively low permeability to water vapor. There was no consistent relationship between palatability and water-vapor permeability of the packaging materials used. Others (19) found that moisture loss in itself had little affect on palatability of the product or on chemical changes involving oxygen consumption.

It has been shown (33) that packaging materials having a low rate of water-vapor permeability are essential, from the standpoint of appearance, for turkeys which have been subscalded.

There is evidence dating back to 1927 (1, 28, 35) that surface dehydration plays an important role in the rate and extent of oxidation of fat. As moisture leaves the tissues, microscopic voids remain, giving any atmospheric oxygen that may be present better access to the fat in the tissues. This would be a factor when packaging materials of relatively high permeability to water vapor are used. According to Dassow (10), desiccation must cause profound changes that alter the relations of the fat molecules to the cellular environment.

It should be noted that in addition to possible losses due to transfer of water vapor through the packaging materials, packaged food may lose moisture without its subsequent transfer through the package (29, 41). Such water vapor condenses as frost on interior surfaces and in air spaces within the package. Frost is unlikely to accumulate in this manner if the packaging material is an ineffective barrier to water vapor, because the water vapor escapes through the packaging material and does not accumulate as frost (41).

Relative influence on palatability of packaging materials and storage temperatures. Studies (19, 39, 40) have shown that the beneficial effects of good packaging are much more evident at higher temperatures than at zero deg. F. (minus 17.8 deg. C.) or lower and that adverse effects of poor packaging are minimized by storage at lower temperatures.

Results of some recent studies at Minnesota (44, 45, 46, 48, 49) suggest that storage temperature had more influence on retention of palatability of the product than did the various packaging treatments used, while the opposite appeared to hold true in other instances (45, 50, 53).

The type of package used was found to be of greater importance than storage temperature in the range of 10 deg. to minus 10 deg. F. (minus 12.2 deg. to minus 23.3 deg. C.) for retention of quality of pre-cooked frozen creamed turkey and chicken (12). Similarly, the type of package was found to be the most important single factor affecting the storage life of frozen strawberries held at temperatures of 10 deg. F. (minus 12.2 deg. C.) and above, but at zero deg. F. (minus 17.8 deg. C.) or lower the effect of the container was not readily evident after storage for one year or more (11).

Loss of moisture and development of rancidity in frozen meats was found to be much less rapid at minus 20 deg. F. (minus 28.9 deg. C.) or lower than at zero deg. F. (minus 17.8 deg. C.) when stored in a packaging material that was relatively permeable to water vapor and oxygen (30). Unusually low storage temperatures appear to be preferable for foods sensitive to oxidative changes when stored in such packaging materials.

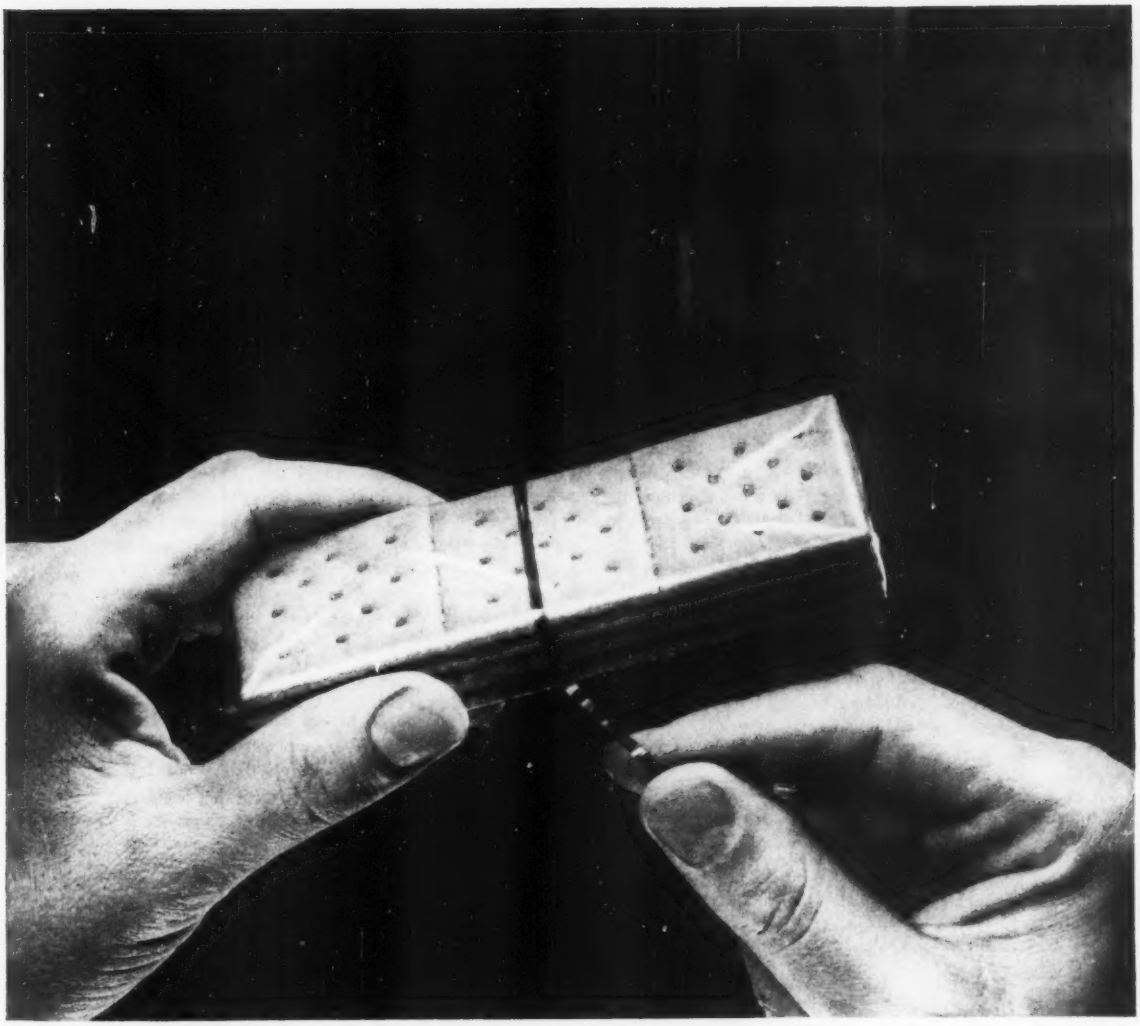
Miscellaneous packaging studies. No advantage was indicated by packaging ground pork and beef in sealed bags of polyethylene film (2½ mil) in an initial atmosphere of nitrogen (48). Similarly, no significant differences were found (24) between samples of frozen peas stored in air and in nitrogen in sealed metal cans. Oxygen present in the air pack after 12 months ranged from 18.8 to 20.5%, and from 0.8 to 1.7% in the nitrogen pack. On the other hand, markedly greater rates of deterioration were found with frozen cut-up chicken in air packs in comparison with nitrogen packs (19).

Several studies (44, 46, 48, 49, 53) failed to indicate that the treatment of a packaging material with certain antioxidants [*Continued on page 215*].



PROF. WINTER

Professor J. D. Winter, co-author of this article, retired June 30 from the University of Minnesota. Associate professor of horticulture in charge of the university's food-processing laboratory, he is nationally recognized as an expert on food freezing and packaging. Several of his studies on the effect of various types of packaging on frozen foods have appeared in MODERN PACKAGING. He will continue consultant work on home freezers and their use.



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Better protective package

Q: *We manufacture a wide range of fragile ceramic products and have had a great deal of breakage in shipping, despite our use of complex corrugated cases that are specially designed to minimize such losses. Is there any material we can use (other than shredded paper) that would enable us to float the product in the shipping package?*

A: Regardless of what suspension material you use, a properly designed corrugated case is also essential. And there are a great number of materials being used in such structures to suspend fragile products during shipment. A partial list are: popcorn, rubberized hair, sawdust and shredded foam rubber. But we recommend that you also examine a relatively new class of cushioning materials, foamed plastics; which are coming into increased use with corrugated structures for this type of packaging application.

The efficiency of a shipping package is attributable less to the bulk of material that surrounds the product than to the energy-absorption factor of the specific cushioning material used. And it is in this feature that the foamed plastics materials excel. Very thin sections of foams made from such plastics materials as polyurethane and polystyrene resins absorb more impact than many times this thickness of more-conventional materials. And because of their extremely high yield, the plastic foams are generally competitive or even lower in cost than other types of cushioning materials.

There have been several cushioned packages for ceramics made from a rigid, pre-expanded polystyrene foam, supplied in planks and fabricated with common woodworking tools. This type of suspension package has generally reduced product breakage almost to zero.

Other polystyrene foams made from expandable beads are now available in thin sheets which are flexible and could be used effectively as wrap-arounds or in the form of pads or block suspensions.

Several packages have been constructed from polyurethane foam, too, which can be foamed in place right in your plant without expensive molds. While this material is more expensive than the polystyrene foams, it is effective in very small quantities if used properly. (For complete details see "Foamed Plastics on the Rise," Modern Packaging, Oct., 1960, p. 95.)

Training packaging mechanics

Q: *We have found it impossible to hire competently trained packaging mechanics who are familiar with modern, high-speed machines and electronic components. Can you tell us what techniques other packagers have used to solve this problem?*

A: No one has truly solved this difficult problem, but there have been several successful programs developed recently that might give you some helpful ideas.

You are correct in presuming that such qualified men cannot be hired. Therefore, one company has inaugurated a training program to develop and train its own men. Through a special labor dispensation, this machinery-supply firm obtains part-time trainees from a local trade school and not only gives them specific experience in packaging machinery, but has been able to create such good will toward the firm that an effective percentage of these trainees return to the company as full-time employees.

A packaging firm has used this technique and also added its own touch. This pharmaceutical company has created an elite group of machine set-up and repair men who control the operation change-over and maintenance of all machines in the plant. For this responsibility, they are paid higher wages than any other hourly employee and have fully equipped workshops located adjacent to the packaging lines for which they are responsible. The trainees are assigned to work with these master mechanics and are rotated throughout the plant to broaden their experience. Wages are raised as these men gain in knowledge until they finally become qualified to assume the duties of master mechanics.

Bite-sized foods in foil

Q: *We propose to market a premium line of frozen cocktail snack items and would like to package these products in individual foil cups, enclosing a variety of different items in standard retail-sized cartons. Is there any automatic machinery that could handle the complete packaging operation?*

A: There is at least one semi-automatic packaging machine on the market for filling and closing preformed aluminum-foil pans. And there is a high-speed automatic unit, devised initially for jams and jellies, which forms pans from roll-stock foil, then fills and seals them.

If your estimated production capacity would warrant an output of 200 units per minute, we believe this latter unit could be easily adapted to handle solid, snack items.

As for cartoning, we do not know what loading pattern you propose to use, but in any case, it would be rather difficult to fit this operation on a fully automatic machine. The control of several tapered foil pans would necessitate specially designed loading buckets that could run into a considerable cost. Therefore, we suggest that, at the start, you try one of the readily available semi-automatic machines which will set up the carton for hand loading, then seal the unit automatically.

Strong, clear Du Pont "Mylar"® solves the tough packaging problems

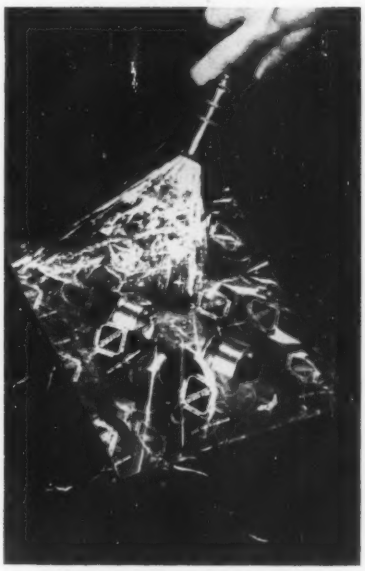
See how combination films using "Mylar"* resist cold, moisture and heat



1. "Flav-R-Pac" corn on the cob stays fresh through freezing, shipping and handling. The vacuum pack of "Mylar" and polyethylene seals in flavor, cuts down on leakers for this Portland, Oregon company.



2. Boiling water can't affect "Mylar" . . . so it's perfect for the heat-in-bag Swift package. The pouch made of "Mylar" extrusion coated with polyethylene, also gives eye-catching, high-gloss, scuff-proof printing.



3. A "Nox-Rust Clear Pak" of specially coated "Mylar" shuts out moisture . . . keeps metal products rust-free. And "Mylar" is so tough that it won't puncture or tear . . . protects against jagged edges.

Ask your Du Pont Authorized Converter† for information about laminated or coated structures of "Mylar". He can supply these combinations as roll stock or pouches.

†For the name and address of Authorized Converters of "Mylar" write E. I. du Pont de Nemours & Co. (Inc.), Film Dept., Wilmington 98, Delaware.

*"Mylar" is Du Pont's registered trademark for its brand of polyester film.

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BETTER THINGS FOR BETTER LIVING
. . . THROUGH CHEMISTRY

DU PONT MYLAR® POLYESTER FILM

Plants & People

Brockway Glass Co., Brockway, Pa., has acquired **Celluplastic Corp.**, Newark, N.J. The newly acquired company, a producer of rigid and flexible plastic containers, will be operated as a wholly owned sub. of Brockway, under the name **Celluplastics, Inc.** Its new officers are: **Robert L. Warren, Jr.**, pres.; **Finley B. Hess**, board chairman; **J. D. Proctor**, v.p. and gen. mgr., and **Anthony Nichols**, v.p. Brockway reports that the acquisition provides the parent company with a more complete container service for its customers.



Stern

Crown Cork & Seal Co., Philadelphia, has appointed **Edward Stern** to the newly created post of director of marketing. He will be responsible for evaluation and marketing of all present and new products, marketing techniques, pricing, sales training, advertising and promotion. Mr. Stern brings 22 years of experience in the bottling industry to his new position.

Minnesota Mining & Mfg., St. Paul, has begun negotiations for the purchase of **Warner-Lambert Pharmaceutical Co.**, Morris Plains, N.J. Under terms of 3M's proposed diversification move, Warner-Lambert will retain its full identity and operating autonomy.

A. R. McNitt becomes mgr. of food-closure sales for **Aluminum Co. of America**, Pittsburgh. **J. Robert Roney** has been appointed mgr. of laminated aluminum-foil sales. Mr. McNitt joined the company in 1947; Mr. Roney in 1949. Among Alcoa's food closures is an aluminum screw cap for baby-food jars. The company's laminated foil is used in labeling and package fabrication.



McNitt



Roney

N. Harvey Collisson has been appointed sr. v.p. and chairman of the staff committee of **Olin Mathieson Chemical Corp.**, New York. **Milton L. Herzog** succeeds him as v.p. and gen. mgr. of Olin's Metals Div. Mr. Herzog had been a corporate v.p. and gen. mgr. for operations of the div. **Richard M. Furdlaud** is now v.p. and gen. mgr. of the corporation's International Div., succeeding **Henry A. Arnold**, who has been named a senior advisor of the organization and continues as a corporate v.p. Formerly director of mktg., **Arthur T. Safford, Jr.**, has been named v.p. for mktg. He succeeds **Donald A. Drummond**, now a corporate v.p. and senior advisor.



Irvine

Arthur E. Irvine becomes market mgr. of flexible-packaging materials for **Union Carbide Plastics Corp.**, New York. He succeeds **J. R. Akers**, now product mgr. for **Union Carbide International**, responsible for technical marketing of polyethylene. According to the company, Mr. Irvine will define opportunities and objectives for Bakelite brand plastics in the flexible-packaging market.

Rap-In-Wax Co., Minneapolis, has purchased **National Packaging Corp.**, Fort Wayne, Ind. National Packaging makes fruit, cookie and confection trays, blister packages for hardware and small jam and jelly packages. This is Rap-In-Wax's third major acquisition over the past three years.

At a recent meeting of the board of directors, **Robert Potter** was elected chairman of **E. W. Bliss Co.**, Canton, O. **J. Ralph Patterson**, formerly v.p. in charge of the company's Mackintosh-Hemphill Div., becomes pres.

George L. Goodhue becomes supervisor of the package-design section in the Packaging Materials Div. of **Armstrong Cork Co.**, Lancaster, Pa. **William L. Martin, Jr.**, is now asst. mgr. of glass-container sales administration and of sales development for the food industry.

The **F. B. Redington Co.**, Bellwood, Ill., has been merged into **Crompton & Knowles Packaging Corp.**, the packaging machinery arm of **Crompton & Knowles Corp.**, Worcester, Mass. According to C&K pres. **Frederic W. Howe, Jr.**, the acquisition will more than double the parent company's sales and manufacturing capacity and enables the packaging machinery div. to offer a broader line of cartoning, wrapping, labeling and case-packing machinery. Redington will operate at Bellwood.



McCarthy

Richard H. McCarthy, Jr., has been appointed v.p. in charge of sales by the **Bradley-Sun Div., American Can Co.**, Hillside, N.J. Formerly director of sales, Mr. McCarthy will be responsible for the sale of collapsible metal and plastic tubes, plastic squeeze bottles, aluminum impact extrusions and other products made by the div. He joined **Sun Tube Corp.** (a predecessor company) in 1955.

Kenneth J. Rawson has been promoted to v.p. in charge of sales for **Plastic Papers, Inc.**, Hicksville, N.Y. He was formerly gen. sales mgr. New v.p. in charge of production for the company is **William Mullen**, former plant mgr. The company also has appointed **George S. Price** as director of research.

Carl A. Setterstrom, formerly gen. mgr. of mktg. for **AviSun Corp.**, has been named v.p. of mktg. for the **Rexall Chemical Co.**, div. **Rexall Drug & Chemical Co.**, Los Angeles.

Union Bag-Camp Paper Corp., New York, reports that it will not exercise its option to purchase **The Crossett Co.**, Crossett, Ark. The company had entered into a tentative purchase agreement with Crossett stockholders last May.

J. K. Shea has been promoted to sales mgr. of **Peterson Filling & Packaging Co.**, Danville, Ill. He has been with the aerosol contract-packaging firm since 1955. **Mrs. Marie Lambert** has joined the company's research staff.



Dickey

Roger C. Dickey has been named to the newly created position of director of equipment development and carton design in the Boxboard & Folding Carton Div. of **Continental Can Co.**, New York. He was formerly mgr. of sales research and promotion. Mr. Dickey's career with Continental Can dates back to 1953, when he joined the then Robert Gair Co. as a packaging engineer.

Mead Johnson & Co., Evansville, Ind., has promoted **Raymond W. Barton** to director of packaging development in the Design & Packaging Development Dept. Mr. Barton has been with the pharmaceutical firm since 1933.

Walter E. Buswell has retired from **Food Machinery & Chemical Corp.'s** Stokes & Smith plant. In recent years, he has been handling all Midwest sales for Stokes & Smith and Kingsbury & Davis paper-box machinery. Since 1914, when he first joined the company, Mr. Buswell has traveled the U. S. and abroad as a salesman, sales supv. and consultant-at-large. He will continue in a consulting capacity.

New sales v.p. of **Plastic Artisans** is **R. B. Van Houten**. The Port Chester, N.Y., company is a manufacturer of plastics packaging materials.

Dennison Mfg. Co., Framingham, Mass., announces the formation of a sub., **Howard Plastics Co.** The new firm has purchased the land, buildings and injection molding equipment of

SIX SUCCESS PACKAGES

Pressure-Formed in Plastic by PLAXALL



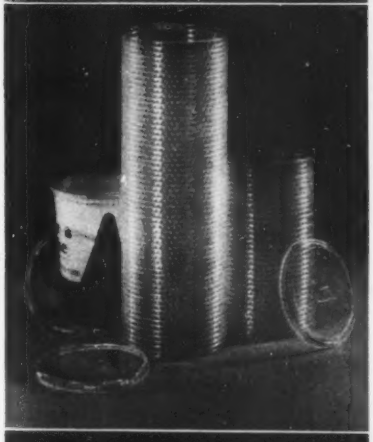
ANSCO'S flash camera outfit may be displayed upright or hanging. Contoured plastic provides complete visibility and overall package strength.



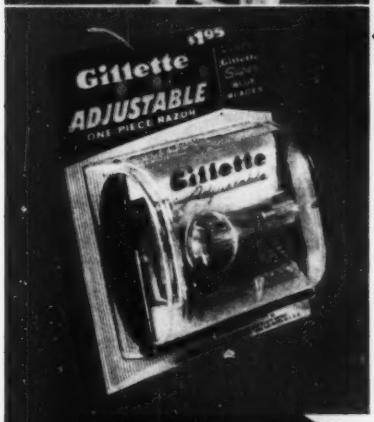
AMPLEX packages fragile flash bulbs in eye-catching Slideplax. Perfect display plus product protection.



CHAPSTICKS are neatly held in the undercut cavities of this new dispensing counter display. In assembly, the yellow styrene forming slides readily onto the cardboard easel.



MILLIONS of oriented styrene closures produced at lowest cost on Plaxall's high-speed precision pressure-forming equipment. Used by leading food and beverage companies throughout the world on paper cups and tubs.



GILLETTE'S new adjustable razor is now packaged in Plaxall's Blisterplax —a butyrate blister pressure-formed for unusual uniformity and strength, and heat sealed onto a display card.



LIGGETT & MYERS cigarette and lighter combination looks like a good buy — and is. Smartly packaged in clear acetate by Plaxall to effectively create impulse sales.

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THE WORLD'S LARGEST PRODUCERS OF THERMO FORMED PRODUCTS AND PACKAGES

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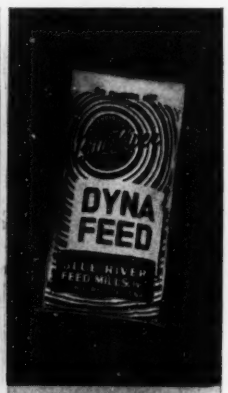
when your printed flexible package must
PROTECT / ENHANCE / REVEAL / SELL
... call kennedy



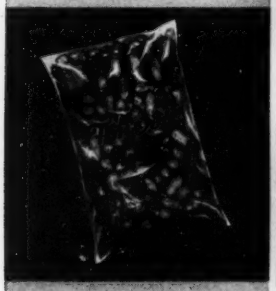
Prize winning National Screw and Manufacturing Company's consumer displays feature Zip-Lip poly bags that increase impulse sales.



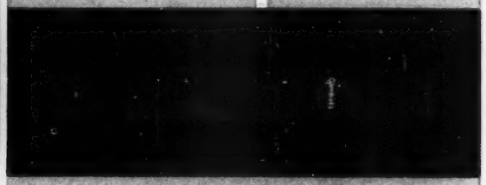
Adequate protection is given outdoor storage with form fitting krinkle kraft covers.



Colorful multiwall bags easily identify and sell stock feeds and fertilizers.



"Buy Me" say attractive printed see-through bags of foods and confections.



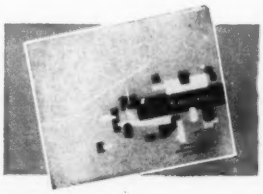
Economy and sales appeal are given odd shaped products by designed-for-the-job kraft bags.

Personalized packaging service and quality controlled production based on more than 50 years' experience are your assurance that your packaging problems are in capable hands at Kennedy. Printed packages help sell your product at point-of-purchase. Kennedy's printing and design facilities add little to packaging cost—add much to product demand.

Write or call today for a Kennedy Sales Engineer to help improve your packaging—for greater sales.

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Ask for a copy of "This is Kennedy"—an illustrated trip through Kennedy's versatile plant.



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Offices in most principal cities. See the yellow pages in your phone book.

Plants & People [*Cont'd*]

D & D Industries, Inc., at 251 Florence St. in Leominster, Mass., and will engage in the manufacture and distribution of injection- and blow-molded products and the Dennison Therimage decorating process. The former contract plastic molding business of D & D Industries will be continued. Officers of the new company are: **H. C. Weeks**, pres; **R. H. Dowd**, v.p., and **F. E. Swisher**, treas. Howard Plastics will specialize in packaging items allied to Dennison's established set-up paper box business.



Wiebler

Harry G. Wiebler becomes product advtg. mgr. for flexible-packaging materials, **Riegel Paper Corp.**, N.Y. He will report to **Floyd Triggs**, corporate advtg. mgr. **Russell Hollingsworth** becomes product advtg. mgr. for printing, industrial and business papers. **David Courtenay** will handle pulp, paperboard and folding carton promotion, reporting to Mr. Hollingsworth.

Charles A. Dickhaut, designer and sales engineer, has retired after 34 years with **Waldron-Hartig Div.** of **Midland-Ross Corp.**, New Brunswick, N.J. Mr. Dickhaut is known for his contributions in the coating methods and web alignment area of the web-processing field. He holds 17 patents in this connection.

American Seal-Kap Corp., New York, has acquired the **Herz Mfg. Corp.** and its affiliates. Herz makes a line of paper cups, food containers and related products. In another major acquisition, Seal-Kap recently absorbed the paper-cup and container business of **Potlatch Forests, Inc.**, including two plants in Elizabeth, N.J., and St. Louis.

George A. Fitzgerald has been elected pres. of **Permacel, div. Johnson & Johnson**, New Brunswick, N.J. The company manufactures pressure-sensitive tapes and industrial adhesives. Mr. Fitzgerald succeeds **George C. Riegger**, who has resigned. **Robert S. Bradford** succeeds Mr. Fitzgerald as v.p. of sales and marketing. The new Permacel pres. joined the company 22 years ago, becoming sales v.p. in 1955.

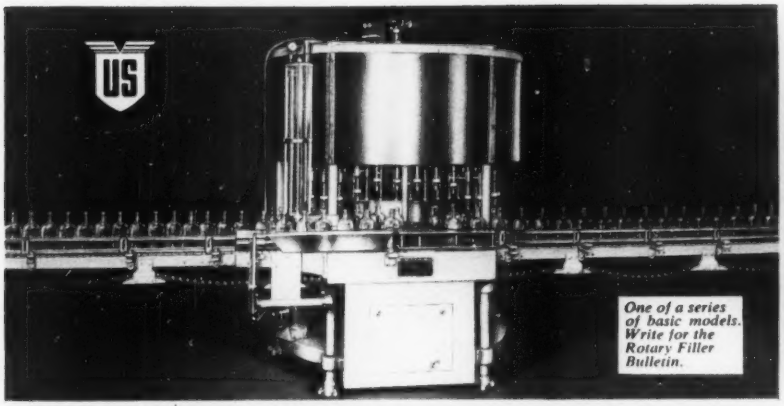


Fitzgerald *Bradford*

Sinclair & Valentine Co., New York, has announced the appointment of **John E. McGuigan** as marketing mgr. Mr. McGuigan has been with S&V for the last six years in a variety of capacities.

Robert P. Scherer, Jr., has become chief exec. officer of **R. P. Scherer Corp.**, Detroit manufacturer of soft elastic gelatin capsules. With the title

[*Continued on page 148*]

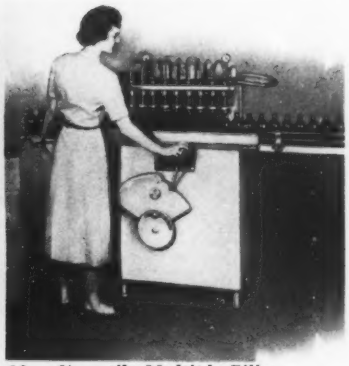


MORE FAMOUS BRANDS TRAVEL THE U.S. LINE

Wherever famous liquid products are packaged, there you are most likely to find a custom-built pace-setter — the U. S. Rotary Vacuum Filler. Throughout the liquid packaging world this great machine is custom-engineered to the requirements of the packaging line it heads. That is why no two U.S. Rotary Vacuum Fillers are ever alike—or why this versatile, automatic machine can never be outmoded.

Does your filling operation fit your volume—is it in line with your competition costwise? Invite a U. S. engineer for an informal discussion. No obligation implied. Address the home office.

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Most Versatile Multiple Filler
MODEL B-49 STRAIGHTLINE VACUUM FILLER. Fills 4 to 9 containers simultaneously; up to 50 small containers p.m. Lever engages and disengages filling stems, otherwise operation is automatic. Adjustable for all container heights up to 14"; miniature and standard finishes, gallon F-style cans, wide mouth jars. Stainless steel filling stems; plastic on order. Conveyor optional. Write for "Bulletin B-49."

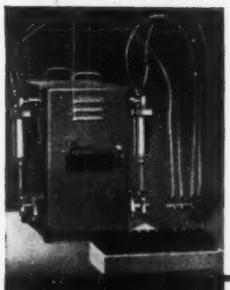


For continuous filling. Containers up to 4⅛" di., 13" high. Request Bulletin B-2.



For all liquids, all containers. Stainless steel. Write for the "Siphon Bulletin."

NOW—FILL ANY LIQUID WITH THE NEW Filamatic LIQUID FILLER



Fills Free-Flowing, Viscous and Foaming Liquids!

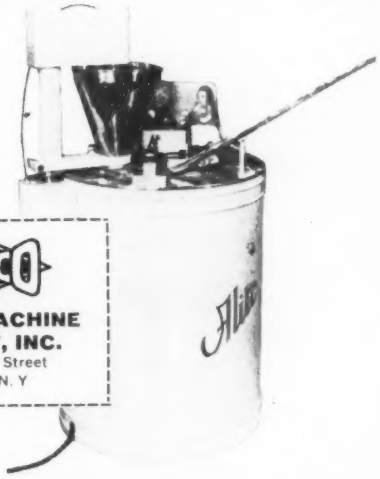
- Completely portable—ready to use on any bench top
- 1, 2, or 4 nozzles—speeds up to 120 per minute
- Fills plastic, glass or metal containers
- Wide filling range—one drop to 1t ounces
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Solve your filling problems with the new Filamatic—the **only** portable, volumetric filler that handles all liquids. Provides drip-free filling of water-thin products, heavy oils, viscous adhesives or foaming lotions. Fills polyethylene bottles, glass or metal containers. Single drop to 16 oz. capacity increases to 2½ gallons with Multi-Stroke Attachment. Write today for new 12 page brochure. . . .

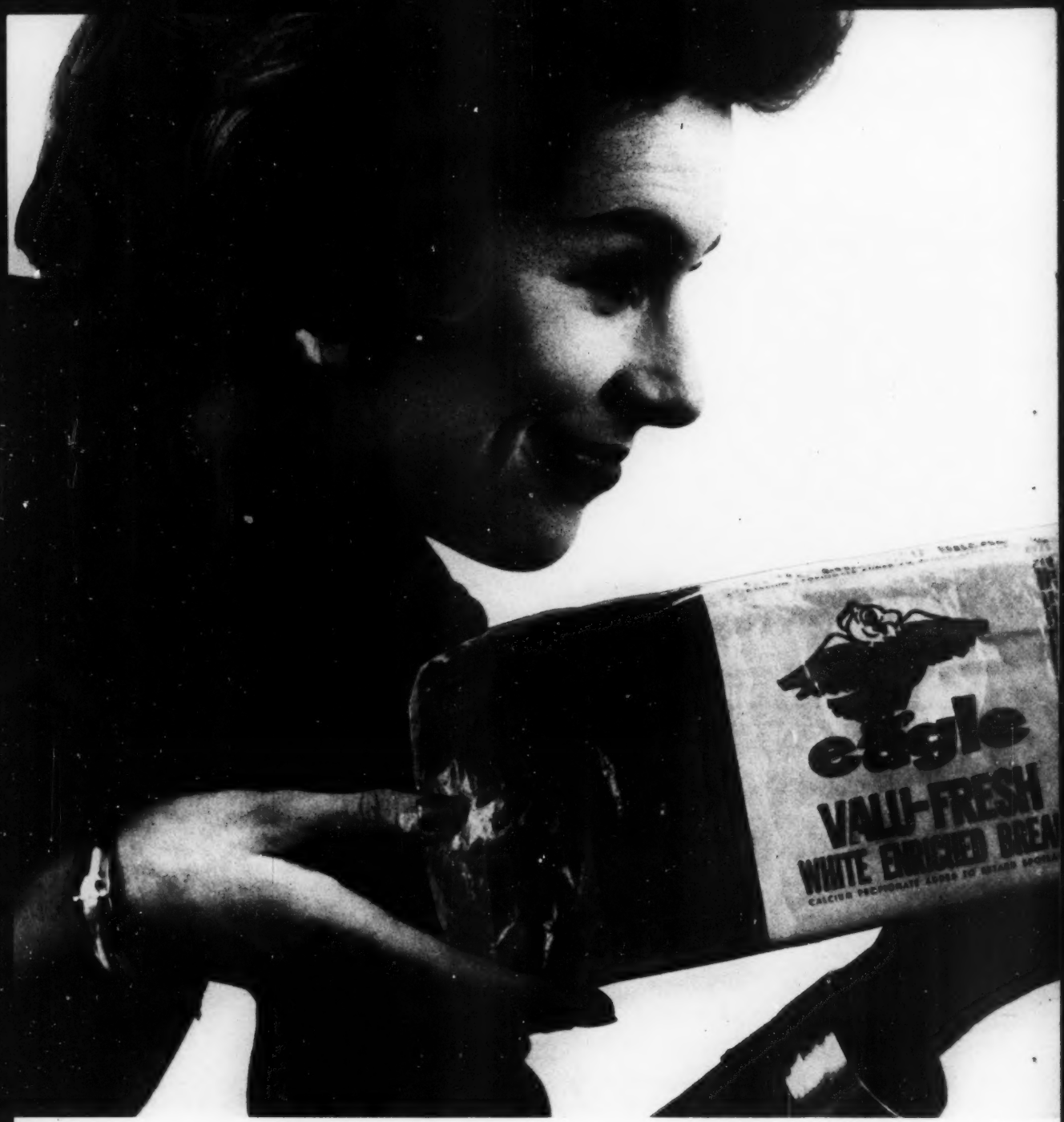
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making compacts?

Powder pack them automatically, economically, to top quality standards with the precision-built Arenco-ALITE compacting machine. The Arenco-ALITE is designed for rapid powder changeover and minimum maintenance. Ideal for the new cream-powder compacts from 1" to 4" major dimension. Recovery system with quick-change bags eliminates waste. Shipped complete and self-contained, as specified. National sales and service facilities. Write for literature and quotation.



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STAY-FRESH PACKAGING

with the selling power of clean, clear Du Pont cellophane



Did you know there are over 100 types of Du Pont cellophane? Some let moisture in . . . some let it out. A variety of coatings enables cellophane to assure you the *exact* moisture protection needed. That's an important reason why many bakers and other smart packagers specify Du Pont cellophane. Your products stay fresh from packaging line to consumer. Look fresh, too! No other material can top the selling power you get from cellophane's clean, clear transparency. You also profit from high-speed machine efficiency . . . colorful printability . . . versatility in package construction.

Are you packaging profitably? Find out why it pays you to start your package planning with one of Du Pont's over 100 types of cellophane. Ask your Du Pont Representative or Authorized Converter of Du Pont Films to help evaluate your special needs. Du Pont Co., Film Dept., Wilmington 98, Del.

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Only $84.50 per month RENTS this "SKIN-PACK" or "BLISTER-PACK" PRODUCTION EQUIPMENT



NOW, the fastest-selling packages on any rack, on any counter, in any store are fast and economical to produce! With this modern completely automatic Skin-Pack equipment that includes preloading table, skin packaging unit and cutting table it's ready to go, easy to use, low-cost to rent. Give your product the showmanship-sales-power that supermarts and self-service outlets are crying for!

Proved Show-And-Sell Power . . . economical even for 10¢ items.

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SALES SERVICE OFFICES IN ALL PRINCIPAL CITIES

Plants & People

[Continued from page 144]

of exec. v.p. and gen. mgr., Mr. Scherer assumes management of the organization founded by his father, the late **Robert P. Scherer**, pres. and chairman of the board, who died July 27.

A new Packaging Equipment Div. has been set up by **Ex-Cell-O Corp.**, Detroit. The company is a manufacturer of milk-packaging equipment and other machinery. Research, engineering, sales and service for the new div. is under **George D. Scott**, v.p. Mr. Scott had been in charge of these same functions in the company's **Pure-Pak Div.**, which is now dissolved. The Packaging Equipment Div. will consist of Ex-Cell-O's world-wide Pure-Pak operations and the former **E. G. Staude Mfg. Co.**, which was acquired by the company in 1958. The new div. will manufacture milk-packaging equipment as well as machinery for manufacturing carton blanks and for packaging a wide variety of products in set-up boxes and folding cartons.



Scott

Dr. James J. Harrison has joined **The New Haven Board & Carton Co.**, New Haven, Conn., as v.p. in charge of mfg. He was v.p. of the paperboard div. of **Michigan Carton Co.**

C. H. Horch has been named gen. mgr. of **Chillicothe Paper Co.**, sub. **The Mead Corp.**, Dayton, O. He is succeeded as mgr. of Mead's Leominster, Mass., div. by **R. L. Boehm. George W. Ruth, Jr.**, has been appointed asst. prodn. mgr. at Chillicothe Paper.

Orchard Paper Co., St. Louis, names **Walter N. Wilhelm** as mgr. of sales development. The appointment, says Orchard, is intended to broaden the company's position in the packaging field. Mr. Wilhelm will concentrate initially on developing and directing sales of such flexible-packaging materials as paper, foil, film and coatings and combinations. He has served in management capacities with **Container Corp. of America, Riegel Paper Corp.** and **The Dobeckman Co.**



Wilhelm

John O. Black has become pres. of **Scale Specialties & Systems**, Denville, N.J. **Donald A. Hansen** is now v.p. of sales and service. The company, which operates a plant in Boonton, N.J., is a supplier of statistical weight controls used on packaging lines.

Plans to purchase **Gilbert Paper Co.**, Menasha, Wis., have been approved by the board of **The Mead Corp.**, Dayton, O. Founded in 1887, Gilbert will be operated under current management.

The election of **Raymond D. Balcom** to the post of exec. v.p. and a member of

GILMAN

3 Generations of Paper Making

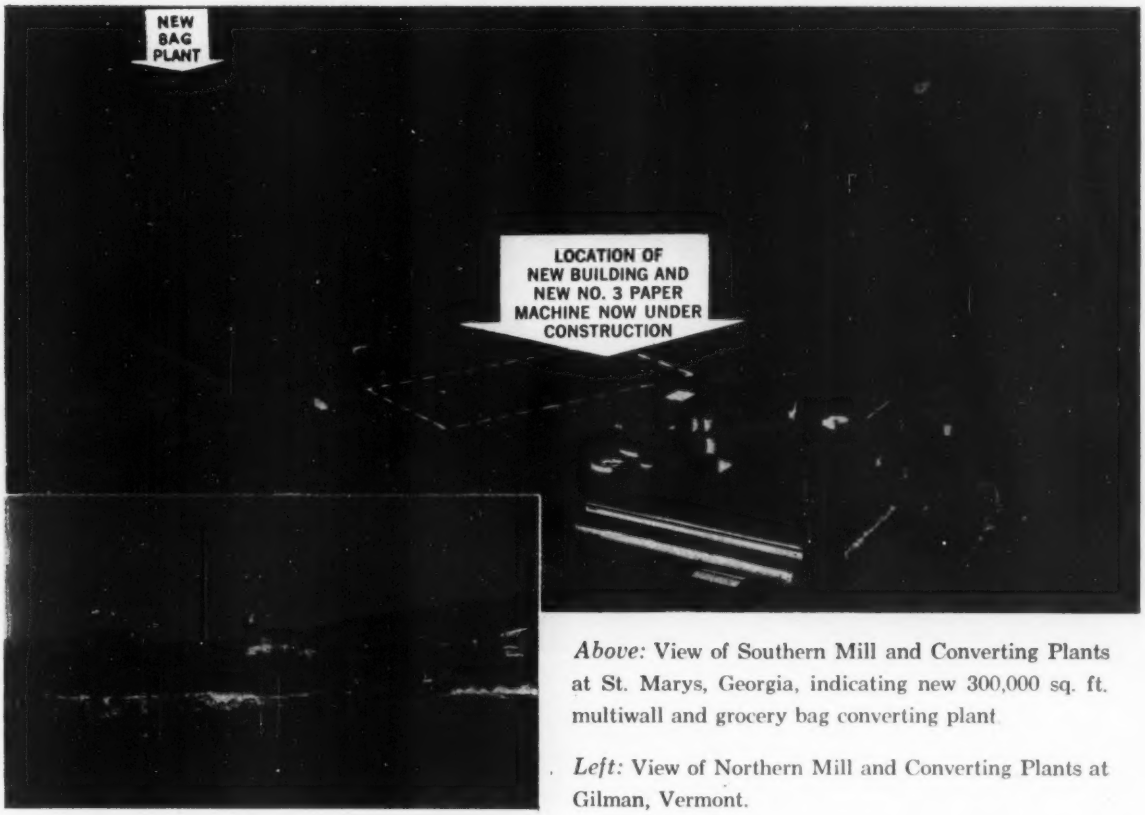
Unbleached Long Fiber Kraft PULP

Bleached Sulphate BOARD

Bleached and Unbleached Kraft PAPER

and Converted PAPER PRODUCTS

including Gummed Tape, Wrapping, Grocery Bags-Sacks, Multiwall Bags, Cellucord® (kraftcord yarn)



Above: View of Southern Mill and Converting Plants at St. Marys, Georgia, indicating new 300,000 sq. ft. multiwall and grocery bag converting plant.

Left: View of Northern Mill and Converting Plants at Gilman, Vermont.

Subsidiaries:
ST. MARYS KRAFT CORPORATION
KRAFT BAG CORPORATION
CELLUCORD CORPORATION

GILMAN PAPER COMPANY

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Oliver Roll-Type Heat-Seal labels are printed and used in continuous roll form and are applied by mechanical heat-sealing methods. Oliver offers you one-stop service, complete from original design to printing — producing attractive, colorful labels for customers nationwide.

OLIVER

There is more to printing labels than meets the eye! For instance, the many new type wrapping films "must be understood," and our specialists can recommend the right adhesive for the film you use.

Our printing production features fine, modern equipment handled by printers who know their machinery, as well as printing quality.

Oliver is right at home when it comes to getting the best out of machinery . . . we manufacture it! What's more, Oliver is the only company that designs and builds label machinery and prints labels, too.

So ours is the broad view . . . and it helps you, too!

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Combination SLITTER and DOCTOR MACHINE



Ideal for All Web Materials

This versatile, low cost Double-Arbor Doctor Machine will help you break costly slitting "bottlenecks". Precision-engineered and ruggedly built, it *works two ways to* speed production slitting!

1. Performs all trimming, rewinding, and other salvage operations, converting reject rolls into saleable stock.
2. Handles short-run and small-size slitting jobs at fractional cost — has dual windup shafts for multiple slitting.

- up to 30" wide roll, 16" diameter
- automatic web guide
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Symbol of Superiority in Converting Equipment

Stanford ENGINEERING COMPANY

SALEM, ILLINOIS • PHONE: SALEM 553

Canadian Rep., Gordon Keats, 133 Flora Dr., Scarborough, Ont.

Manufacturers of Slitters, Web Guides and Rewinding and Constant Tension Equipment

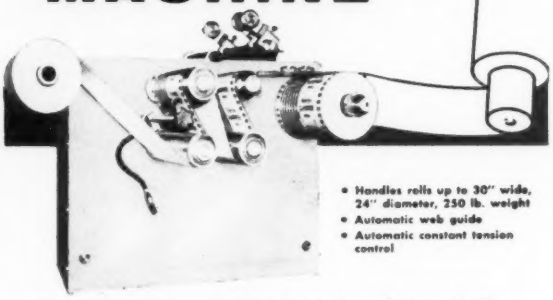
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Got a REWIND problem?

Stanford SOLVES it!

with the Model 140

DOCTOR MACHINE



- Handles rolls up to 30" wide, 24" diameter, 250 lb. weight
- Automatic web guide
- Automatic constant tension control

Quick, economical way to convert defective rolls into saleable stock! This compact Stanford Doctor Machine easily corrects soft, telescoped, uneven, or out-of-register rolls without tying up your production equipment. Saves many times its own cost in material and labor.

Stanford . . . Symbol of Superiority in Converting Equipment

UNCONDITIONALLY GUARANTEED TO DO THE JOB

WRITE FOR ILLUSTRATED BROCHURE

Stanford ENGINEERING COMPANY

SALEM, ILLINOIS • PHONE: SALEM 553

Canadian Rep., Gordon Keats, 133 Flora Dr., Scarborough, Ont.

Manufacturers of Slitters, Web Guides and Rewinding and Constant Tension Equipment

Plants & People [*Cont'd*]

the exec. committee has been announced by **Forbes Lithograph Mfg. Co.**, Boston. Mr. Balcom, who joined Forbes in 1957, has been asst. treas. and comptroller, plant mgr. and v.p. of mfg.



Schuler

M. Claude Schuler has been named gen. mgr. of the Stapling & Stitching Div. of **Bostitch, Inc.**, East Greenwich, R.I. He will be in charge of all operations of the company's largest div. Mr. Schuler was formerly national sales mgr., and prior to that had served five years as head of the company's Atlanta sales branch. He has been with Bostitch for 14 years.

Allen B. Wrisley Co., Chicago, has elected **Wayne E. Edwards** as v.p. of mfg. and research. Among other responsibilities, he will direct package engineering for the toiletries packager.

Ed Macauley has been elected v.p. and gen. sales mgr. of **Premier Packages, Inc.**, St. Louis. The company is a manufacturer and distributor of packaging supplies. Mr. Macauley gained national fame as a collegiate and professional basketball player.

New v.p. and gen. mgr. of **Modern Plastic Machinery Corp.**, Clifton, N.J., is **Frederick J. Maywald.** A veteran of



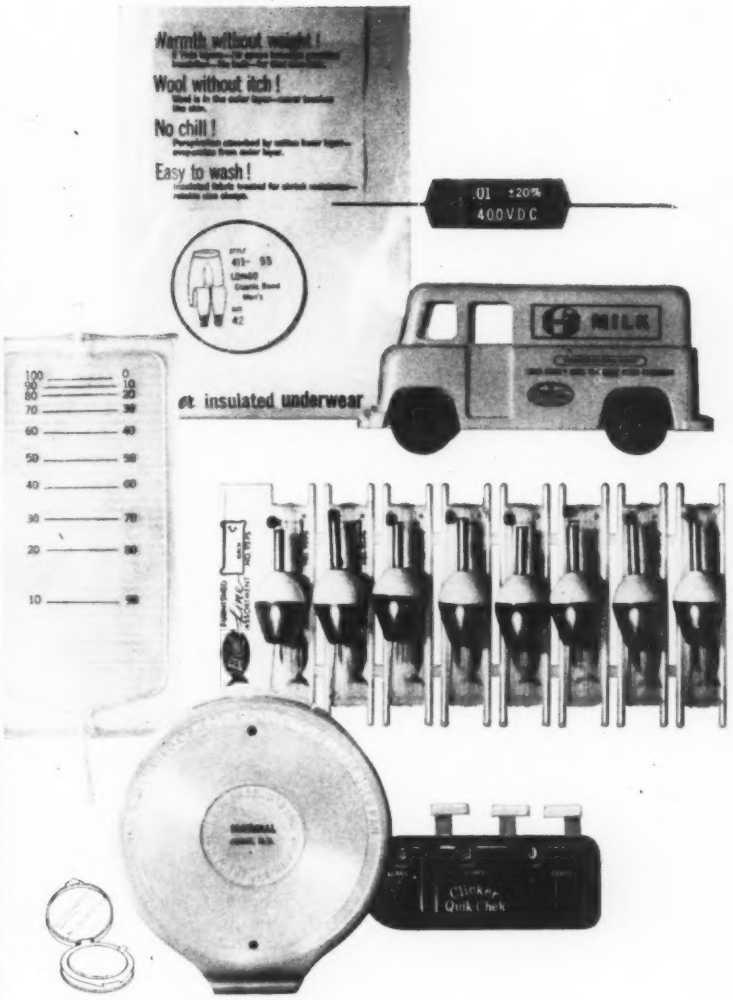
Maywald *Gilbert* *Kovach*

more than 20 years in the plastics field, Mr. Maywald is a member of the **Society of Plastic Engineers.** In other promotions made by this manufacturer of plastics-extruding and blow-molding machinery, **Casper S. Gilbert** becomes sales mgr. and **Leslie J. Kovach** becomes v.p. in charge of blow molding.

New England Confectionery Co., Cambridge, Mass., has announced that all phases of Necco, Candy Cupboard and private-brand packaging design have been placed under the supervision of **Robert H. Jackson.** Mr. Jackson's former responsibilities as product development mgr. have been assumed by **Richard M. Drown,** who will continue to direct the advtg. and sales-promotion department for the company.

To meet a rising demand for aluminum caps and seals for container use, **Aluminum Co. of America**, Pittsburgh, is planning a third major expansion of its Richmond, Ind., works. Construction of additional production facilities and modernization of existing facilities are already under way and completion is expected in the late spring. Among the closures which will be produced in greater quantities following the current

[*Continued on page 157*]



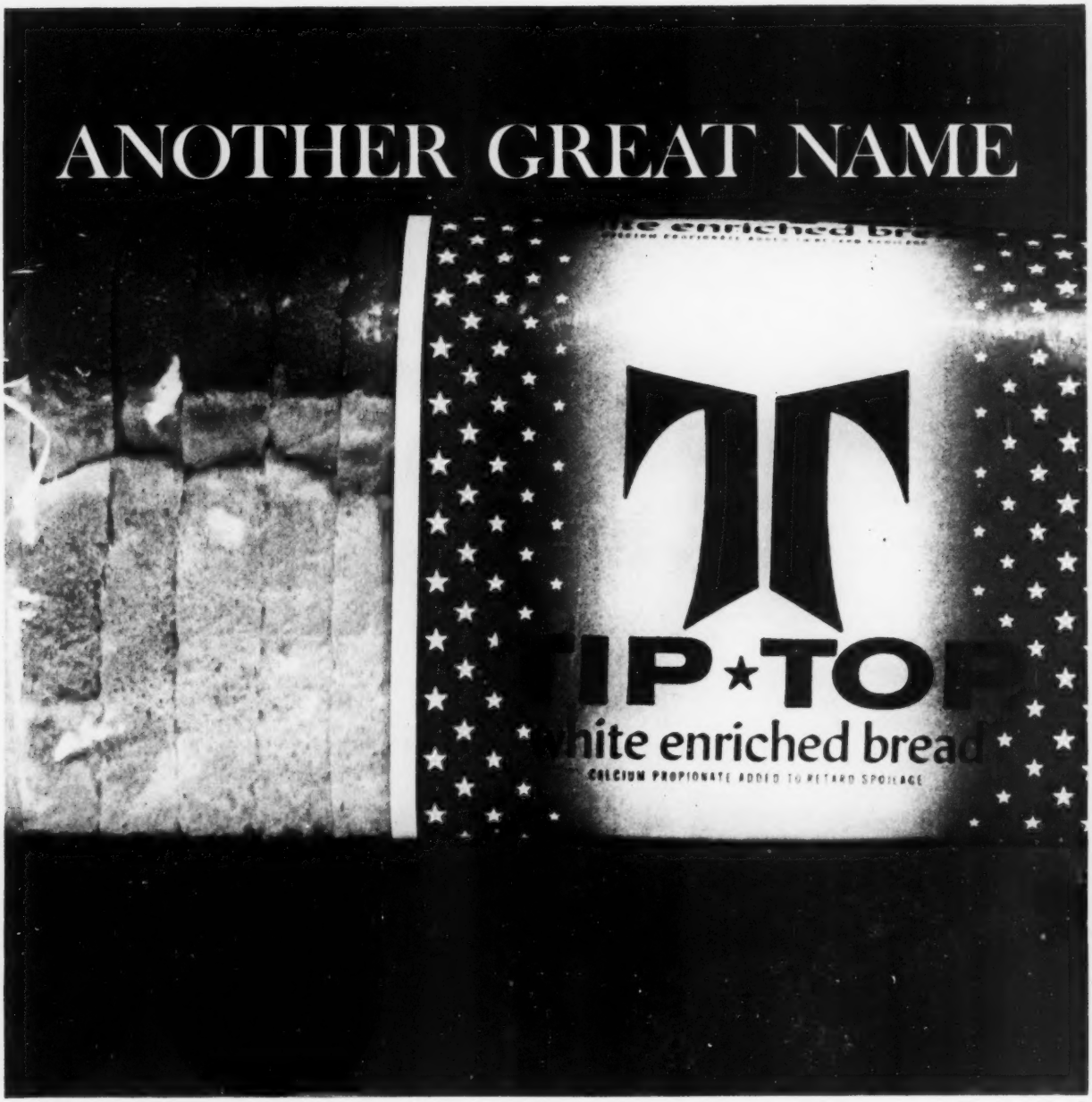
No doubt about their identification and decoration

—*it stops the eye, tells the story, helps the sale.* This is marking *everybody* can read—made by Markem machines and printing elements. And perhaps most important, the Markem *specialty inks* used have just the right combination of opacity, color, adhesion and drying speed each type of plastic requires.

This is the "Markem method" that can be working for you—the *right* machine, type and ink to do *your* particular marking job quickly, clearly and at low cost, in your own plant. It *stays* clear and attractive because it stays *on* your product and can't fall off or easily smudge. Call your Markem representative for complete facts, or write Markem Machine Co., Keene 1, N. H.

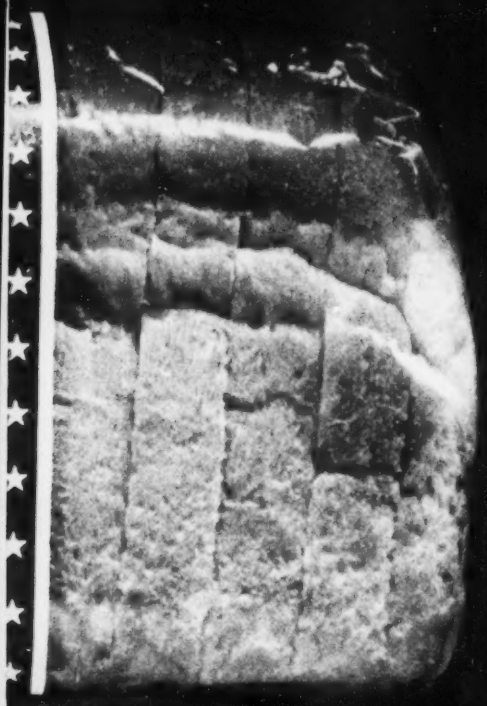
MARKEM

EVERYTHING INDUSTRY NEEDS . . . FOR PROFITABLE MARKING . . . SINCE 1911



AviSun Olefane (Polypropylene Film) gives Ward Baking Company 3-way advantages

GOES *OLEFANE*!*





The Ward Baking Company now uses AviSun's Olefane Polypropylene for their new varieties recently introduced in New York.

1 **IN THE PLANT.** Efficiency and good machinability . . . runs with less rewraps.

2 **IN THE STORE.** Bright, clear package . . . stronger sales appeal. Better moisture retention than any other bread wrap. Fewer stale returns.

3 **IN THE HOME.** Stays fresher longer . . . retains flavor. Resists tearing . . . easy reclosure.

AVISUN SPECIALISTS can answer your specific questions, and help you plan for better wrapping at lower cost with OLEFANE.

*a trademark of AviSun Corp. PHONE: HUbbard 5-5831, Marcus Hook, Pa.

AVISUN CORPORATION
365 Post Road, Marcus Hook, Pa.

Send us complete information covering AviSun Olefane.

Please have a Technical Specialist call.

Name_____
(Please Print)

Position_____

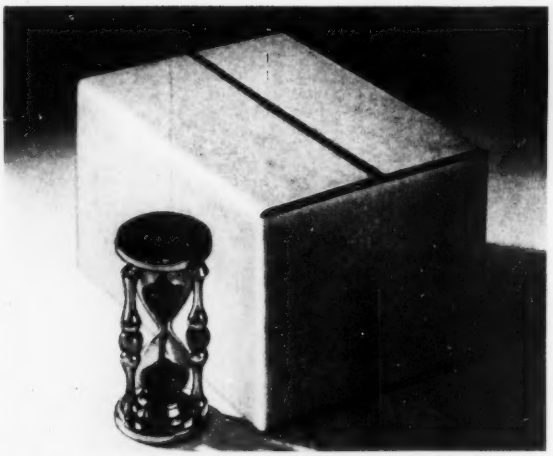
Company_____

Address_____

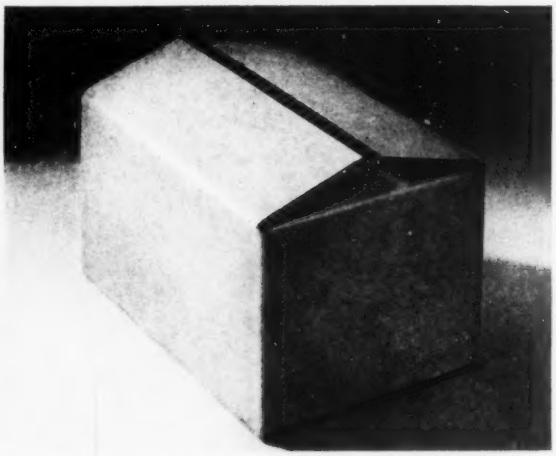
City_____ Zone_____ State_____

3 COMMON PROBLEMS IN CASE SEALING

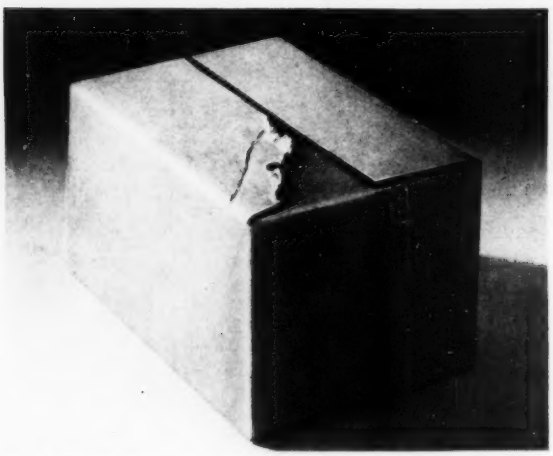
(And how the Arabol man helps you solve them)



THE ADHESIVE DRIES TOO SLOWLY—When this happens, unsealed boxes pile up and shipping schedules can't be met. Check your compression unit. Cases may be moving through it too fast. Or perhaps they're under insufficient compression. Then, there's the paperboard itself—it may be *damp*. In any event, see your Arabol man. He'll come up with an adhesive that suits the condition.



THE SEAL WON'T HOLD—We can list three possible reasons: (1) Your boxboard is soaking up the adhesive too fast. Solution: adjusting adhesive viscosity to suit your specific machine requirements. (2) Case content is too heavy. Solution: a stronger or faster drying adhesive. (3) Your sealed box is exposed to moisture. Solution: a water-resistant adhesive. Why guess? Ask the Arabol man.



THE SEAL IS TOO STRONG—Sometimes an adhesive can seal a case so tightly, you'd think only dynamite could blast it open. If the problem develops suddenly, check your paperboard. A change in the finish may be the cause. One solution is an adhesive that provides less penetration. Another is to apply the adhesive via the skip or strip method. What you want is just the *right amount* of holding power—and the Arabol man will see that you get it.

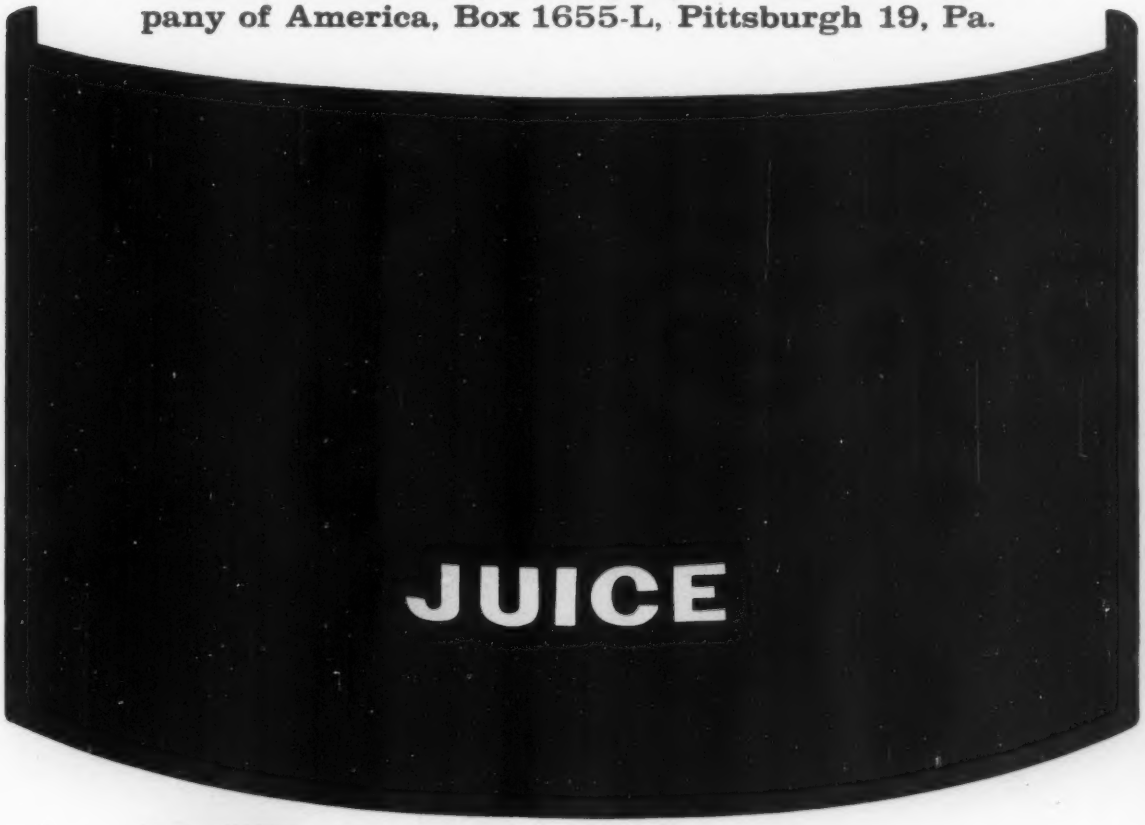
THE BEST WAY to solve case sealing problems is to prevent them from happening. You can begin by contacting your Arabol man. His adhesive know-how can be a big help. So can his close contacts with machine and shipping case manufacturers. To give you a better understanding of how to select and use adhesives, send for our free booklet, "HOW TO BUY ADHESIVES—23 BASIC YARDSTICKS"

ARABOL ADHESIVES

14 PLANTS AND WAREHOUSES TO SERVE YOU ON A LOCAL BASIS

THE ARABOL MFG. CO., 110 EAST 42ND STREET, NEW YORK 17, N. Y. • CHICAGO • SAN FRANCISCO
LOS ANGELES • ST. LOUIS • ATLANTA • PHILADELPHIA • BOSTON • PORTLAND, ORE. • ITASCA AND
McALLEN, TEX. • CINCINNATI • DENVER • TAMPA • LONDON, ENG

LABELS OF ALCOA ALUMINUM catch the customer's eye, and hold it . . . give instant product identity . . . instant sales . . . simply outshine your competition. From cosmetics to candy, aluminum labels impart to your product that "look of quality and value"... these are labels that glisten with sell . . . go right on selling even after the purchase is made. Anywhere, aluminum foil labels stand out . . . stay bright . . . stay on. And, attention-getting foil labels can boost your product into a higher sales bracket. We invite your inquiry. Aluminum Company of America, Box 1655-L, Pittsburgh 19, Pa.



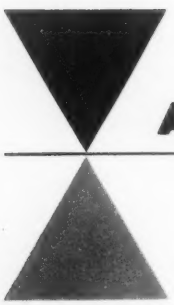
Better Packaging

ALCOA ALUMINUM

Foil Packaging

Put Alcoa's up-to-the-minute aluminum packaging services to work for you. We create new designs, check costs, answer questions on anything from appearance to performance. We offer you full-scale research facilities . . . merchandising and marketing data . . . the most sales-minded approach in the industry. All mobilized at Alcoa to help you design it . . . apply it . . . sell it.

When you think about packaging . . . think about these many ways to better packaging . . . with ALCOA ALUMINUM. Alcoa concentrates on all kinds of packaging. You name it! Cans, cartons, bottle caps, jar caps, labels . . . everything! Alcoa, working hand in glove with America's top package manufacturers, assures you that the look of your aluminum package will have the distinctive style and bounce that makes the buyer want to buy. Alcoa puts its extensive research facilities to work for you. Want to know how that new aluminum package will affect your product's shelf movement? Alcoa will test it for you. Merchandising and marketing data are at your fingertips. Alcoa, with the most creative, sales-minded design approach in the industry, invites you to write in for more information on one of its favorite subjects: Alcoa Aluminum Packaging. Write to Aluminum Company of America, 1655-L Alcoa Building, Pittsburgh 19, Pa.



Better Packaging

ALCOA ALUMINUM

Foil Packaging

Plants & People

[*Continued from page 151*]

expansion are Alcoa's Flavor-Lok cap for baby food and pilferproof closures for wines and liquors, cosmetics, pharmaceuticals and other products.

Polymer Industries, Inc., producer of industrial adhesives and textile specialty polymers, Springdale, Conn., recently dedicated its new, million-dollar plant expansion at Springdale. According to **Dr. Frank Campins,** founder and pres. of the firm, the new facilities were necessitated by the increased demand for high-performance functional, economical materials for the adhesives and textile industries.

The Cincinnati and Louisville sales districts of the **Hazel-Atlas Glass Div.** of **Continental Can Co.** have been combined into one district, with headquarters at 617 Vine St., Cincinnati. **H. Carman Crago** has been appointed mgr. The Pittsburgh and Cleveland districts of Hazel-Atlas also have consolidated, with headquarters at 215 Porter Bldg. in Pittsburgh. **John S. Auvil** has been named manager.



Zimmerman

Roy Zimmerman takes the newly created position of coordinator of packaging for **Independent Grocers Alliance,** Chicago. IGA is a food-marketing organization with some 80 wholesale and 5,000 retail members. According to IGA pres. **Don R. Grimes,** the new post was set up as part of a program to develop a better family image for pre-packaged products.

To provide better service to customers in the West Coast area, **Keyes Fibre Co.,** Waterville, Me., has drawn up plans for a new molded-pulp-package manufacturing plant in Sacramento, Calif.

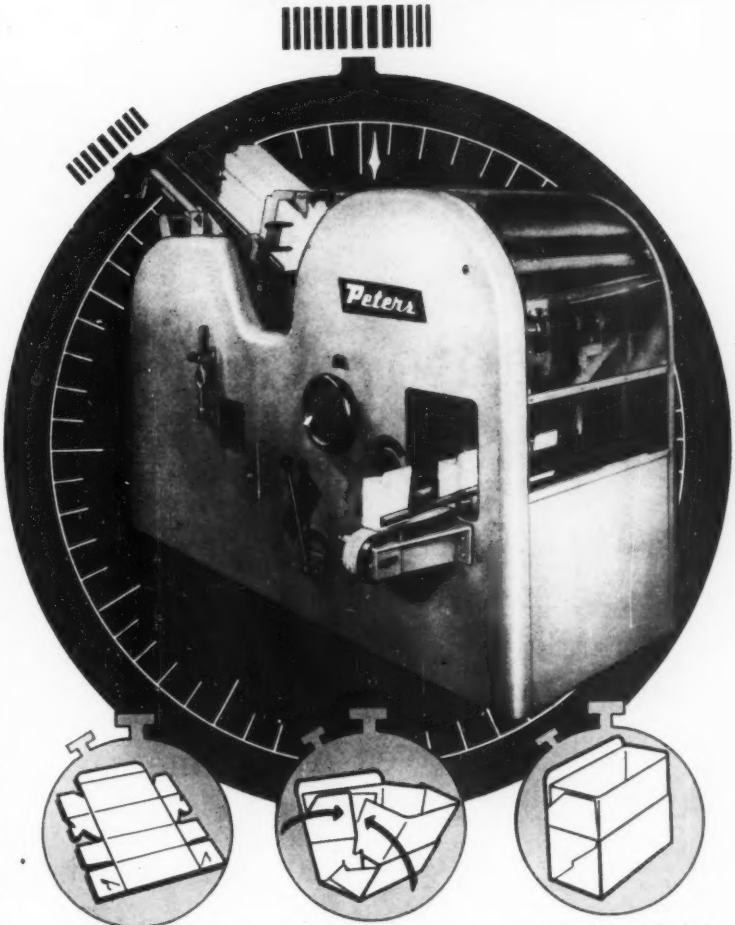
Holt Monaghan has been appointed a v.p. of **Muirson Label Co.,** Meriden, Conn. He will be in charge of Eastern operations, having been Eastern Div. sales mgr. for several years prior to his current promotion. He succeeds the late **George E. Fichtner.**

Visual Research International is a newly formed association of companies designed to provide packaging and marketing research on an international basis. Members of the association are: **Visual Research, Inc.,** Chicago, **Visual Research of Great Britain,** London; **Institut des Recherches Visuelles et Comportement,** Paris, and **Studio Sigla,** Milan. Pres. of the new association is **Edmund W. J. Faison.**

A new blow-molding plastic container plant, specializing in sizes from one quart to 55 gallons, is now in operation at the Milwaukee facilities of **Eclipse Plastics Industries of Wisconsin, Inc.,** High-density polyethylene and other thermoplastic materials are being used for the extra-large containers. The com-

[*Continued on page 160*]

1/2 SECOND!
From Die-cut Blank to Lined Carton



1. Blanks are fed from inclined magazine

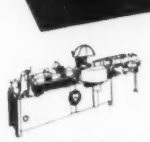
2. Paper liner is cut, then folded with blank

3. Then blank is locked to form finished carton

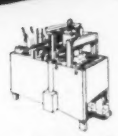
120 lined cartons every minute . . . lowering your costs for packing lard, shortening, tea bags, cookies, donuts and other products which require the protection of a lined carton. Completely *automatic*. Operates at *variable* speeds. And can be made *adjustable* to handle a wide range of carton sizes. **The Peters Model SE.**

Ask for a demonstration or write for descriptive literature

Peters MACHINERY COMPANY
4700 Ravenswood Ave., Chicago 40, Ill.



carton folding and closing machines



moderate-speed . . . and high-speed carton and tray forming machines





cellophane sheeting and stacking machines

STATUS REPORT:

Monsanto plastics for packaging & the food additives amendment

As part of Monsanto's continuing responsibility to customers and to package users, we present this up-to-the-minute status report of Monsanto plastics for food packaging and a brief definition of terms important to a general understanding of the Food Additives Amendment, which became effective March 6, 1960 ■ Monsanto's extensive research and development over the years have resulted in many plastic formulations from ingredients which are generally recognized as safe or which have prior sanction or which have no reasonable expectation of migration ■ By using the Monsanto plastics listed on the following page, you can be certain of packaging materials which comply with the Food Additives Amendment. We will keep you informed of additions.

Monsanto

MONSANTO DEVELOPER IN **PLASTICS**

The Status of Monsanto Plastics—November, 1960

PRODUCTS	BASIS FOR RECOMMENDED USE IN FOOD PACKAGING
LUSTREX® STYRENE PLASTIC	
General Purpose Molding Grades	
Hi-Flow 55, Hi-Flow 66, Hi-Flow 77, Hi-Heat 99	Generally recognized as safe and prior sanction by FDA.
Impact Molding and Extrusion Grades	
Hi-Test 42 Type, Hi-Test 88 Type, Hi-Test 48 Type, Hi-Test 180 Type	Extension granted by FDA until March 5, 1961 (Long term feeding studies highly favorable)
MONSANTO POLYETHYLENE (NATURAL)	
Injection and Blow Molding Grades: 51, 52, 60, 80, 705, 805', 935, 9752	Prior sanction by FDA.
Film Extrusion Grades: 30, 31, 32, 33, 34, 37, 38, 706, 10406, 13406, 18300, 19706, 23406, 25706, 26706	
Extrusion Coating Grades: 406, 537, 73	
VUEPAK® F CELLULOSE ACETATE	Generally recognized as safe and prior sanction by FDA.
OPALON® VINYL RESINS	
300, 330 FM, 300 FM, 410	Prior sanction by FDA.
Polyvinyl chloride acetate copolymers	
506, 510	Prior sanction by FDA.
SCRIPTITE®	
Paper and Paper Board Coating Resins	
50, 52, 53, 54	No reasonable expectation of migration when used as wax-holdout resin.
40 (Urea Resin)	Prior sanction by USDA Poultry Division as wet strength poultry package resin.
33 (Melamine Resin)	Prior sanction by FDA.
RESIMENE®	
883 (Melamine Resin)	Prior sanction by USDA Meat Inspection Division for lard cans.
U901 (Urea Resin)	Prior sanction by FDA.
LYTRON®	
Latex Paper Board Coating Resins	
6, 6-A	Not subject to regulation when used in single use disposable containers. Petition being prepared for regulation of all food packaging uses.
RESINOX® PHENOLIC RESIN	
P-97	Prior sanction by USDA Meat Inspection Division for lard cans.

DEFINITIONS

of terms important in understanding the Food Additives Amendment.

Food Additives Amendment – 1958 Amendment to the 1938 Federal Food, Drug and Cosmetic Act. It requires, for the first time, that any chemical compound in food, whether intentional or incidental, must be proved safe before the food is put into interstate commerce. The amendment became effective March 6, 1960.

Food Additives – All chemical compounds in food are *not*, however, in *legal* sense food additives. Compounds with prior sanction or which are generally recognized as safe are specifically excluded by the new statute from the category of food additives.

Prior Sanction – Before the 9/6/58 enactment of the Food Additives Amendment, the Food and Drug Administration and divisions of the United States Department of Agriculture had only limited authority to approve use of chemical compounds in foods. Favorable response to a request for approval normally meant an informal letter of no objection – now classified as a prior sanction – exempt under the new amendment.

Generally Recognized as Safe – The FDA interprets this to mean that it is the widely held opinion of acknowledged authorities that a given chemical compound is safe in human food. FDA has published in the Federal Register, lists of compounds which are considered generally recognized as safe.

No Reasonable Expectation of Migration – It is obvious that chemical compounds not in food cannot be food additives. But the definition of "zero" content requires scientific judgment. No reasonable expectation of migration (of pharmacological significance) realistically recognizes that infinitesimally small amounts of certain chemical compounds may be and generally are present in processed foods without hazard.

* * *

A special report on food packaging colorants has been prepared for package manufacturers using colorants in their packages. For this report, write to Monsanto Chemical Company, Plastics Division, Room 773, Springfield 2, Massachusetts.

Packaging a
PREMIUM
PRODUCT
for all it's worth

through creative molding by Dillon-Beck's Design and Engineering Staff ... specialists in producing pace-setting plastic packaging and molded parts.

LIPKOTE
by COPPERTONE



Designed and produced to soothe more, sell more ... threaded, rotating pin and cup precision-molded to raise and lower Lipkote as needed.



ADDED ATTRACTION:
Flexible, easy-fitting polyethylene cap has personalized markings (O-△-☆-□) for individual identification.

Custom Produced by
DILLON-BECK
(Metal container by J. L. Clark)

★ DESIGNS & MODELS
★ MOLD and DIE CONSTRUCTION
★ MOLDING & ASSEMBLY of THERMOPLASTICS RANGING from 1 to 16 ozs.

Inquiries Invited
DILLON-BECK
MANUFACTURING CO.
Designers•Molders•Producers of *Purposeful* Plastic Products
1227 CENTRAL AVENUE
HILLSIDE, NEW JERSEY

Plants & People

[*Continued from page 157*]

pany has developed its own blow-molding machine for making large containers in round, square or oblong shapes.

Charles J. Fillare is new mgr. of the customer-service dept. of **Mosstype Corp.**, Waldwick, N.J. Most recently sales mgr., Mr. Fillare has been with the company for almost 10 years. The firm makes printing plates, design rollers and other equipment.

Following the recent acquisition of **Broadstreet Paper & Packaging Supply** of Boston, **William Schwarz**, former principal of Broad-street, is now New England district sales mgr. for **Pickwick Papers, Inc.**, New York, the new parent company.

A new industrial advertising agency geared to serve the needs of the packaging, converting and related fields, has been formed in Midland Park, N.J. Called **S. T. Daniels & Co.**, it is headed by **Stuart T. Daniels**, formerly of the advertising and marketing staff of **Union Bag-Camp Paper Corp.**

Eugene Jacobson has been elected a v.p. of **Sun Chemical Corp.**, New York. Mr. Jacobson was pres. of **Facile Corp.**, which he founded in 1941, until its recent acquisition by Sun Chemical.



Jones

John H. Jones is the new advtg. mgr. of **Vulcan-Associated Container Companies, Inc.**, Birmingham, Ala. The corporation manufactures steel pails, drums and metal cans in seven plants in the U.S. and Canada. Mr. Jones, who has been engaged in advtg. and public-relations work for the past 10 years, will headquarter in Birmingham.

Construction of a new pulping and paper-making research and development laboratory in Middletown, O., has been completed by **The Black-Clawson Co.**, New York. The facility includes the complete wet- and dry-testing stock preparation laboratories and pilot plant transferred from Fulton, N.Y.; a new cold soda pulping system pilot plant and special equipment for testing new paper-making techniques.

Formerly with **Hampden Glazed Paper & Card Co.**, **Donald J. Munn** is now pres. and treas. of the **De Pear Paper Co.** of Chicago. Other newly elected officers of the box-covering and specialty-paper firm are: **Gloria Munn**, secy., and **Peter M. Munn**, **William M. Ward** and **Dr. F. R. Huckin**, directors.

Aluminum Foils, Inc., has changed its name to **Consolidated Aluminum Corp.** The firm, a producer of aluminum foil, coiled sheet and "super-purity" aluminum, is located at Jackson, Tenn. According to the company, growth and diversification made it necessary to change the name, to better reflect its broader scope of activities.

R. Taylor has been named pres. of **Griswold Engineering, Ltd.**, Toronto. He succeeds **R. C. James**, who has been elected chairman of the board. Mr. James also was recently appointed v.p. of **Hayssen Mfg. Co.**, Sheboygan, Wis.

Owens-Illinois Glass Co.'s Paper Products Div. recently opened its 21st corrugated box plant in Valley Industrial Park near Minneapolis. Initial capacity for producing converted roll stock and boxes reportedly will be at a rate of 30 million sq. ft. monthly, a ten-fold increase over the old O-I plant in St. Paul, now closed.

Phillips Chemical Co., Bartlesville, Okla. is adding facilities to its plant near Houston, Tex., which will increase production of "Marlex" plastics to 100 million pounds per year. Completion of the program is expected next year.

Lermer Plastics, Inc. Garwood, N.J. has doubled its plastics-production facilities with the addition of 25,000 sq. ft. of manufacturing space. Lermer makes plastic vials for the pharmaceutical, electronic, cosmetic and other fields.

Construction has been completed on a new structure for **Standard Packaging Corp.'s** Modern Packages Div. in Los Angeles. The building will provide additional warehouse facilities and an area for the mixing of labeling inks.

Larson Bros. Co., Kansas City, Kans., food packager, has installed a line of custom-packaging machinery. The company reports that it is now set up to do custom packaging of foods and sundries, including pharmaceuticals.

Aeroprojects, Inc., has been granted two basic U. S. patents on ultrasonic welding, containing method and equipment claims on ultrasonic spot-type and ultrasonic seam welding. **Carmine F. DePrisco** of Aeroprojects, **William C. Elmore** of Swarthmore College and **J. Byron Jones**, founder and pres. of Aeroprojects, are named as inventors on both patents.

Dyna-Foam Corp., sub. of **Sun Chemical Corp.**, has purchased **International Research & Development Co.**, Ellenville, N.Y.

H. B. Fuller Co., manufacturer of industrial adhesives, has moved into a new office building at 1150 Eustis St. in St. Paul. The former office is being converted for research and development.

Bernard E. Hain has sold his interest in Bernard's Laboratories, Cincinnati, and formed a new contract-packaging business to be known as **Wright Package, Inc.**, Cincinnati. The new firm will do special contract packaging, with emphasis on plastic squeeze tubes.

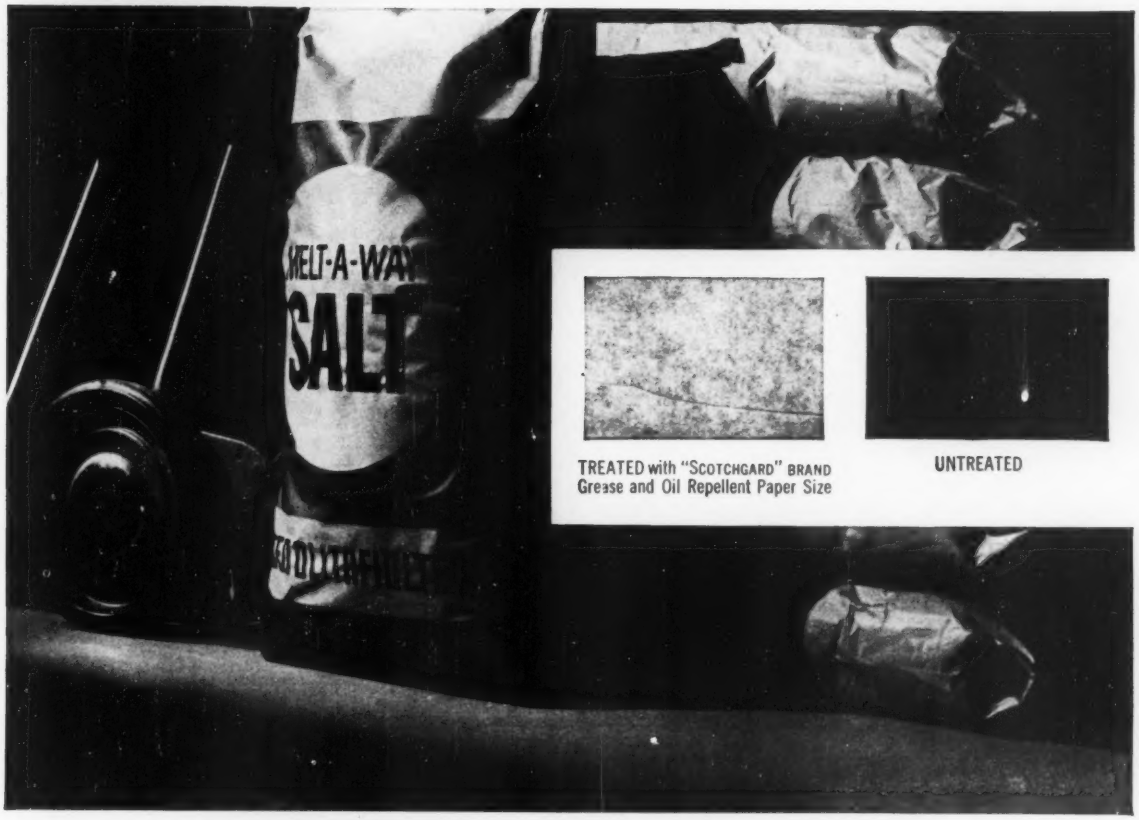
Promotions

Thomas W. Brown, Jr.: to v.p., Multiwall Bag Div., **Owens-Illinois Glass Co.**, Toledo. He will continue as gen. mgr. of the division.

Tor B. Arneberg: to sales mgr., New England and Middle Atlantic states,

3M COMPANY CHEMICALS

THE RAW MATERIALS OF PROGRESS



TREATED with "SCOTCHGARD" BRAND Grease and Oil Repellent Paper Size

UNTREATED

Asphalt penetration problems end for paper treated with SCOTCHGARD®

GREASE & OIL REPELLENT PAPER SIZE

See for yourself! Even hard-to-control bleeding of kraft asphalt laminate virtually halts when the paper is treated with SCOTCHGARD BRAND Grease and Oil Repellent Paper Size.

The bleached kraft samples, inset above, bear this out. They were continuously exposed to temperatures ranging from 130°F. to 140°F. for 57 days. At the end of that period, the untreated sample is nearly black from bleeding. Yet the sample treated with SCOTCHGARD Paper Size is almost factory-fresh. Think what this can mean for you—

Fresh, legible packages that remain attractive all the way through distribution, right to the user. And SCOTCHGARD Paper Size does this all without sacrifice of color, strength, porosity, flexibility, or any other important characteristic. Because it is a member of the 3M family of fluorochemicals, which are not laid on as films or coatings, *it penetrates each paper fiber* for maximum grease and oil resistance.

Let SCOTCHGARD Paper Size help you in these many ways: Prevent unnecessary wax penetration on waxed papers. Permit use of thinner-than-normal polycoating. Permit packaging of greasy and oily parts without penetration. Prevent grease crawl and staining at seams and closures in multi-wall bags. "Hold out" dope and prevent strike-through in carbonizing tissue. Give unparalleled resistance to asphalt penetration. SCOTCHGARD Paper Size has helped solve packaging problems of long standing for many of America's leading manufacturers.

So, too, has KEL-F® Brand Plastic Film for flexible, see-through packaging requiring heavy-duty protection without bulk. Ideal for paints, cosmetics, pharmaceuticals and chemicals, KEL-F Brand Plastic Film is completely impermeable, virtually unaffected by heat, caustics, acids, temperatures, withstands handling, storage, shipping. Provides maximum packaging security, good looks and convenience.

Learn how these 3M products can help solve your problems. Just state the facts in a letter addressed to: 3M Chemical Division, Dept. KCB-110, St. Paul 6, Minn.

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Signed in Gold



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Brilliant, tarnish-proof golden strips are promotion-packed in high-style two color acetate... Golden Touch adds golden elegance and excitement to your holiday packages and special year-round premium offers.

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Buna N Engraving Rubbers; Grey and Black; thicknesses 3/32" to 1/2", hardness range 20 to 80 durometer, including special inserts for register control. Unvulcanized rubber in Red, Grey and Black plus Sticky-back for plate mounting and Goodyear Related Products.

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The Kordite Co., Macedon, New York. **Paul Jennings**: to sales mgr., South Atlantic states.

Fenton J. Dowling: to sales mgr., Western area, San Francisco, Canco Div., **American Can Co.**, New York.

Robert D. Lamb: to v.p., New York sales, **Bartelt Engineering Co.**, Rockford, Ill.

J. Frank Greeley: to Western sales mgr., Multiwall Bag Div., Torrance, Calif., **West Virginia Pulp & Paper Co.**, New York.

Theodore A. Thonet: to research director, **Puritan Aerosol Corp.**, Boston.

Harold J. Ruhl: to Central regional industrial-foil and container-sales mgr., Chicago, **Kaiser Aluminum & Chemical Sales, Inc.**, Oakland, Calif.

William E. Donovan: to sales mgr., Eastern New York and New England, **Fasson Products**, div. of **Avery Adhesive Products, Inc.**, Painesville, O.

Ira E. Cavallo: to Eastern sales mgr., Molded Packaging Div., **Diamond National Corp.**, New York. He succeeds **John M. Guilfoyle**, now with the Diamond Match Division.

R. L. Smith: to Chicago district sales mgr., Bondware Div., **Continental Can Co.**, New York.

Joseph A. McAnally: to asst. mgr., **H. B. Fuller Co.**, Georgia.

George E. Oakley: to asst. mgr., paperboard sales, Carolina Div., **Riegel Paper Corp.**, New York. He succeeds **Rodger C. Derby**, who has resigned from the company.

W. J. Pyle: to sales mgr., New England, **Sealright Co.**, Fulton, N.Y.

Appointments

George E. Corbin: to Southeastern sales mgr., **Crescent Ink & Color Co. of Georgia.**

Robert Edwards: to creative director, **Henry Lithograph, Inc.**, Glendale, Calif.

Obituaries

Daniel D. Lanning, mgr. of industrial market development and customer service in the Film Dept. of **E. I. du Pont de Nemours & Co.**, Wilmington, Del., died Sept. 13. He was 48. Mr. Lanning joined Du Pont in 1934. He had been active in research and sales of industrial and packaging films and in national packaging organizations.

Mark M. Biddison, 68, former pres. of the **General Chemical Div.** of **Allied Chemical Corp.**, New York, died Sept. 18. Mr. Biddison, with General Chemical for 39 years, served as pres. from 1952 until 1955. He retired in 1957.

Charles H. Goodwin, asst. sales mgr. of **Columbia Box Board Mills**, Chatham, N.Y., died Aug. 13. He joined the company as a salesman in 1952 and was promoted to his last post in February of this year.

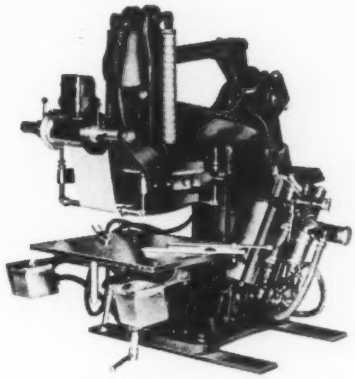
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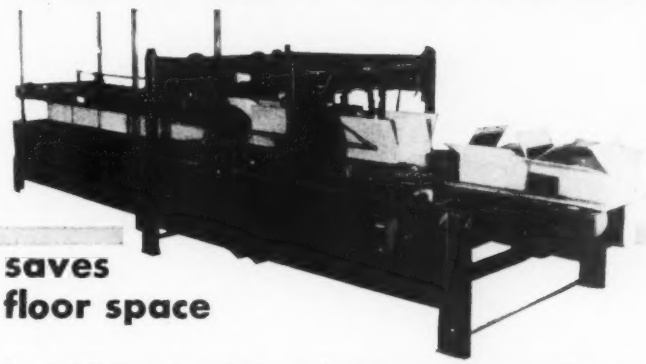
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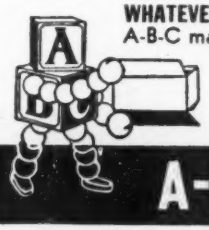
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This A-B-C Short Case Sealer really increases packaging efficiency. Glues, folds and seals either or both top and bottom flaps in one operation—automatically. Speeds up to 30 cases a minute. Finest welded construction. Ball bearing construction reduces maintenance. Guaranteed not to get out of "time".



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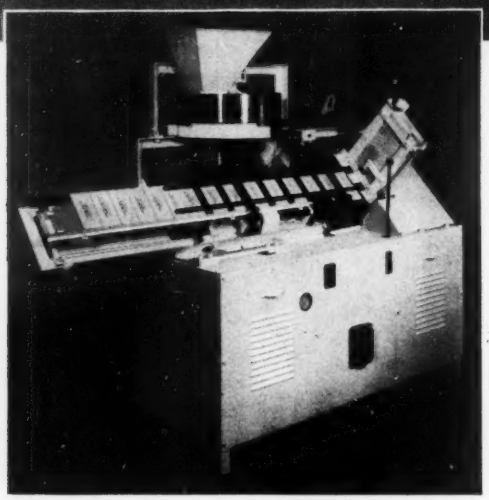
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The Low Cost Way to Pack Candies . . .

New U. S. hard candy packer fills a family-size box every second!





Typical hard candies such as baked beans, cinnamon drops, jaw-breakers, Jordan almonds, milk chocolate peanuts, jelly beans and candy corn, are packed at a running speed of 60 cartons-per-minute in the new U.S. C-24 Cartoner.

Suitable for packing cartons in the ¼-lb. to ½-lb. size range, the C-24 is designed specifically for the popular larger size (supermarket or family-size) candy cartons. The C-24 picks the flat carton from the magazine, opens it, tucks the bottom flaps, volumetrically fills the carton, then tucks in the top flaps.

The C-24 is ideal for manufacturers who package a variety of hard candy items in the same size package. It will handle all products without adjustment when package size and content volume are uniform.

This machine can be built for one carton size within the range of 6" x 2" x ¾" minimum to 7" x 3½" x 1" maximum — or to special dimensions outside these limits. One operator is required for supervision. Write US today for complete details.

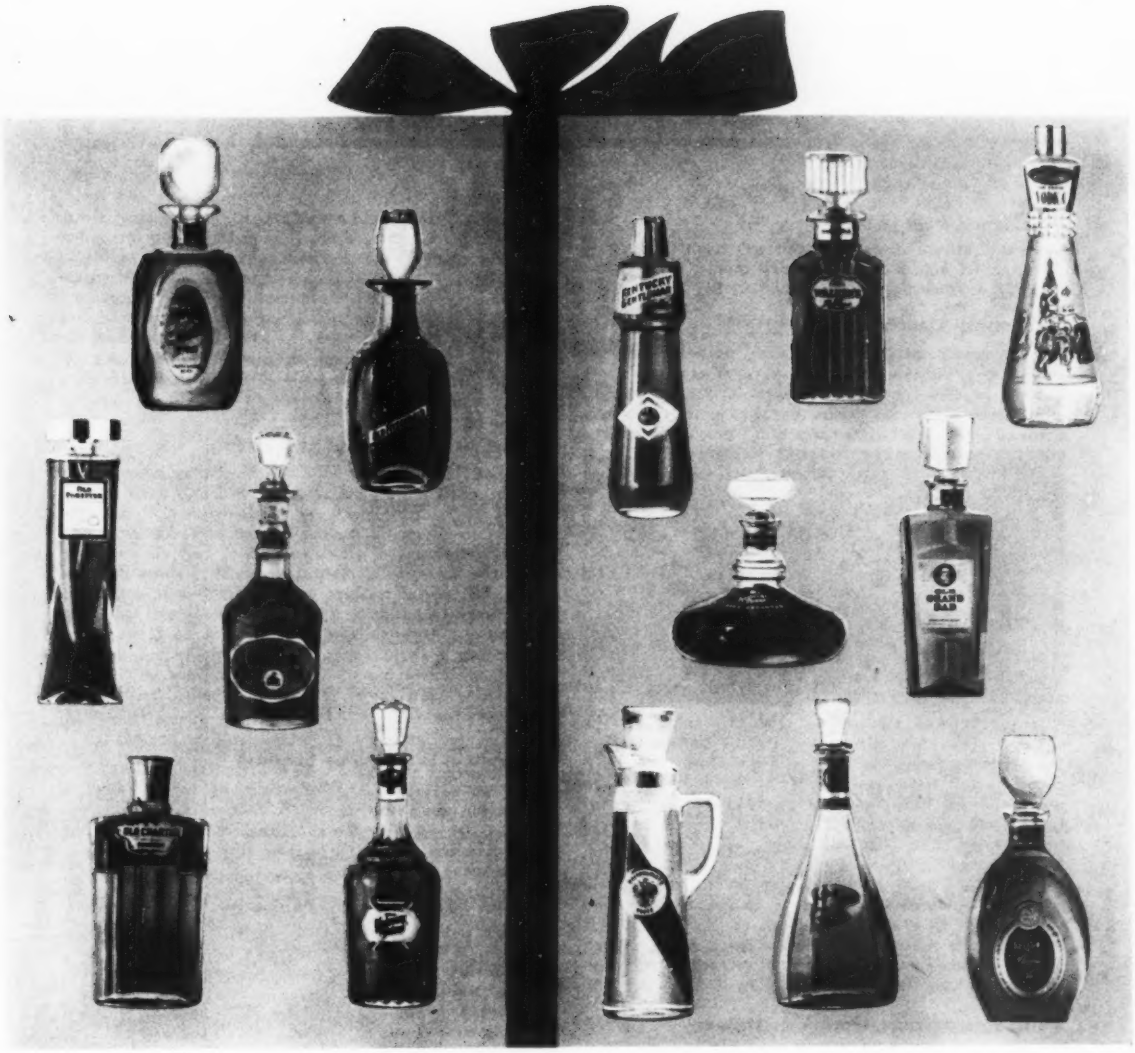
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Equipment & Materials

[*Continued from page 56*]

the cost of private molds and special-run colored glass, says the supplier. For additional details, contact *Ceragraphic, Inc., 171 Newman St., Hackensack, N.J.*

Oral-spray attachment

An attachment that converts a slim, purse-size metered aerosol spray container into a convenient oral-dosage applicator is offered by Emson Research. The attachment, which serves also as the closure for the container, reportedly has been designed for maximum sanitary protection in purse



or pocket, as well as for quick and easy operation. The sequence photo above illustrates the action of the new plastic attachment, which is said to be produced at nominal cost. At left, it serves as a snug-fitting closure on the spray package (fitted with a conventional 20mm metered valve). In the center, the closure/oral applicator has been removed from the container. Note the opening in the front of the attachment, which fits over the dispenser valve when the closure is used as an oral applicator. At right, the attachment has been placed horizontally over the valve. Pressure on top of the valve actuates the metered spray and directs it through the oral applicator into the user's mouth, without product waste. Valve, container and attachment are available from *Emson Research, Inc., Bridgeport 5, Conn.*

Re-usable cottage-cheese container

A line of re-usable, "table-ready" cottage-cheese containers, made of polystyrene, is available from Kent Plastics. The



supplier reports that the vacuum-formed package was developed after a survey to determine the wants of homemakers and milk dealers. The high-impact plastic container is claimed to be flexible enough to resist cracking, yet tough enough to withstand repeated use. It is also reported to be adaptable to existing automatic filling machinery. The cylindrical cup container comes in four sizes and five colors, with the name of the dairy printed in two colors on the lid. Because there is no printing on the body of the container, its re-use value is enhanced. *Kent Plastics Corp., Evansville, Ind.*

High-impact polyethylene film

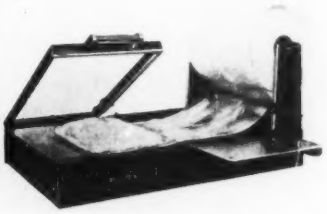
Formulated to overcome the problem of rough-handling breakage in free-flow frozen-food packaging operations is Western-Waxide's new high-impact polyethylene film. The chill-roll cast film also is reported to possess a low melt index that enables tight seals through a greater temperature range. Superior gloss, clarity and machinability are other features cited for the chill-cast polyethylene. According to the company, the new film formulation underwent extensive testing to prove its resistance to impact shocks received in transit or in store. Single-wall film pouches for loose-frozen foods, the company points out, must resist the same buffeting as conventional carton-and-overwrap packages. Contact the supplier for details. *Western-Waxide Div., Crown Zellerbach Corp., San Leandro, Calif.*

Can-bail shaping and assembly

American Can introduces a machine that automatically shapes can bails and affixes them to 1-gal. paint cans at reported speeds up to 40 per minute. The new unit, says the supplier, removes the last manual operation in production-line assembly of bailed containers, enabling user companies to realize economies in time and in costs. Bails are fabricated on the machine from a reel of wire coil which can produce as many as 8,500 bails. The formed bails then are attached automatically to the ears of 1-gal. containers. According to the supplier, the new unit (which occupies 14 sq. ft. of floor space and can be integrated into existing production lines) frees four men for other assignments. *American Can Co., Canco Div., 100 Park Ave., New York 17.*

Economy in impulse sealing

The latest addition to Weldotron's line of polyethylene packaging equipment is the "I." series of Multi-Sealers. The equipment, says the supplier, enables the packaging of products in polyethylene in a single operation, directly from roll stock. Important savings in labor and in other packaging costs can be realized, the company claims. The new units operate by the thermal impulse sealing principle. Made of aluminum, the machines are portable and can be adjusted to package a wide variety of products, including records, blankets, shirts and other goods. The equipment is available in various sizes. *Weldotron Corp., 841 Frelinghuysen Ave., Newark 12, N.J.*



Gentle-action parts feeder

A new feeding machine for use with delicate, fragile and highly finished parts has been introduced by Aidlin Automation. Called the R.D. Feeder, it is said to receive a load of parts in random position and to deliver them in oriented manner to a transfer track without damage, marking or scratching. Feeding is performed by a flat disk which rotates about an axis which is slightly off vertical. This principle of operation, says the company, makes for gentle action and quiet, high-speed feeding. Typical material-handled by this unit include ceramics, glass and highly finished enamel-surfaced items. Bins with 18- and 24-in. diameters are available. Details are offered by *Aidlin Automation, Inc., 1613 East New York Ave., Brooklyn 12.*

New supplier of machinery

Avery Macey International is a newly formed company which offers printing equipment and other industrial machinery. The supplier reports that it is equipped for the

[*Continued on page 172*]



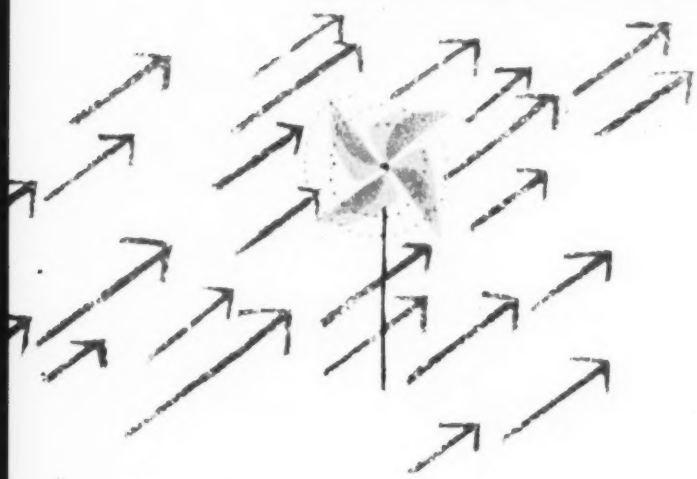
YOUR PRODUCT UNDER ATTACK!



. . . and relentless are its enemies that work to destroy the shelf appeal, freshness and customer satisfactions that you build into your product. Are you still trusting the sales life of your product to a single so-called "all-purpose" packaging material?

Why not win the battle with a *custom combination* package by Milprint — a thoroughly researched package built to the precise specifications your product requires.

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Another Foil packaging success with Anaconda Aluminum...



Cartons and labels manufactured by The House of Harley, Inc., New York

Glamour Products get new glamour look from *ANACONDA ALUMINUM FOIL*

As part of their marketing strategy, **Revlon** has given the packaging of their beauty products the same glamour quality as the products themselves. To do this, they have turned to sparkling aluminum foil. The exciting results are illustrated . . . cartons and canister overwraps of gold and silver embossed foil, designed for that extra "select-me" appeal so necessary on crowded counters and displays.

House of Harley, Inc., New York, in designing and producing these Revlon packages, has selected quality **Anaconda Aluminum** foil. The embossed Aquamarine folding cartons use laminated foil board stock . . . the canisters and bath powder box have embossed, laminated foil overwraps.

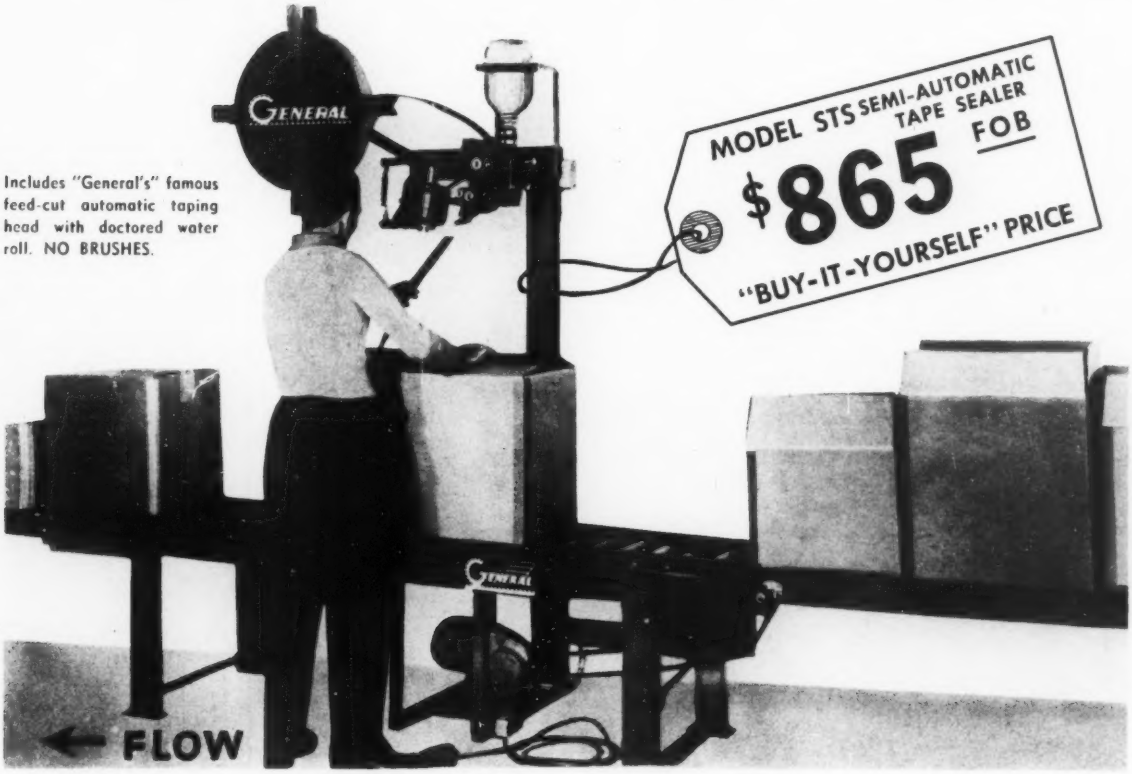
To learn more about the display and protective advantages of foil packaging and labeling for your products, call your Anaconda Aluminum representative. And for helpful design tips, write for our new booklet, "*Aluminum Foil Design*", Dept. ML-11, Louisville 1, Kentucky.

When you buy foil for packaging or printing, remember . . . every industry has one member who specializes in customer satisfaction

ANACONDA ALUMINUM

ANACONDA ALUMINUM COMPANY • GENERAL OFFICES, LOUISVILLE, KENTUCKY

NEW! GENERAL'S SEMI-AUTOMATIC TAPE SEALER



Includes "General's" famous feed-cut automatic taping head with doctored water roll. NO BRUSHES.

MODEL STS SEMI-AUTOMATIC TAPE SEALER
$865 FOB
"BUY-IT-YOURSELF" PRICE

AN AUTOMATIC SELF MEASURING TAPE DISPENSER with POWERED CONVEYOR TO TAPE SEAL MIXED or FIXED SIZES

1. Doubles production per man hour. Cuts labor costs in half.
2. Accurate tape lengths insure savings of a $1.00 or more per 1000 boxes.
3. Uses large 24" diameter rolls—low cost and less downtime.
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5. Pays for the machine in a few months.
6. Single strip tape sealing wins user satisfaction because it is so easy to operate without injury to persons, contents or containers.

HOW IT WORKS. A touch of the foot switch automatically conveys a case to the work station. At the same time, the dispenser automatically delivers an exact length of moistened tape ready to hand seal the top flaps and extend over onto each end panel for the proper distance. Hitting the switch again repeats the cycle.

We offer this "BUY-IT-YOURSELF" economy price of $865. FOB if you mail or 'phone your order. You therefore save when we save selling costs. This offer may be for a limited time only. It costs to put off.

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General Corrugated Machinery Co., Inc.
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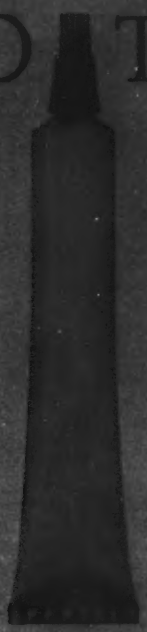
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In cosmetic, pharmaceutical and industrial product packaging also!

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A CHILD'S SIMPLE FAITH that anything broken can always be fixed is tribute to the many wonder-working "fix-it" products now in Sheffield collapsible metal tubes. Since 1850, Sheffield has set the standard of excellence in practical packaging...helping to make hundreds of household products so usable "even a child can do it!"

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design, manufacture and sale of new rotogravure printing presses, coating, laminating and embossing machines, and special machinery of interest to the graphic arts, to paper mills and to converters of paper, film, foil and board. The firm also offers web-fed and sheet-fed rotogravure presses in various sizes and color specifications. *Avery Macey International Corp., 420 Lexington Ave., New York 17.*

Heavy-wall polystyrene jar

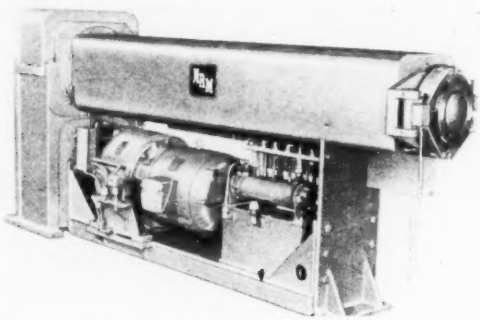
Designed primarily for use by cosmetics packagers is Celluplastic's new heavy-wall polystyrene jar with polystyrene closure. The tapering container is offered in 1-, 2-, and 4-oz. capacity. The jars are carried in stock in white opaque, although any standard color can be supplied in orders of 5,000 or more, says the firm. For positive sealing, the polystyrene closure is fitted with a pulp-and-vinyl liner. *Celluplastic Corp., 24 Commerce St., Newark 5, N.J.*

Polyester-film contour bags

Du Pont reports the successful development of contour bags made of heat-shrinkable "Mylar" polyester film. This development, says the company, opens the way for meat and poultry processors to capitalize on the strength and clarity of the film in skin-tight packaging. The film's impermeability to moisture and gas transmission are other advantageous factors cited by the supplier. The bags can be adapted to standard closure and shrink-processing equipment with only slight adjustment of the machinery, says the company. At a water temperature of 205 to 212 deg. F., the film is reported to shrink instantly and uniformly, without distorting bag printing. Du Pont has authorized two converters to manufacture the polyester bags. They are: *Comet Packaging & Paper Co., 439 Fourth Ave., New York 16,* and *Vac Pac, Inc., Baltimore, Md.*

Line of thermoplastics extruders

National Rubber Machinery has introduced the Pacemaker line of plastics-extrusion equipment, in $3\frac{1}{2}$, $4\frac{1}{2}$ and 6 in. sizes. Features cited for the new machines include space-saving design, modular construction, greater thrust and



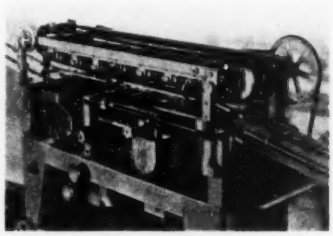
horsepower capacity and optional liquid cooling. Drive motor and speed control are positioned under the extruder barrel, to conserve plant space. Design of the equipment, says the supplier, permits selection of the drive gear ratio, thrust bearing capacity, drive horsepower, screw type and heating-cooling combination evenly matched to extrusion requirements of a material. The company also notes that the optional liquid-cooling feature provides precise control of extruder temperature, even when processing unstable materials. *National Rubber Machinery Co., Akron, O.*

Tray of transparent polystyrene

Container Corp. has begun production of a rectangular plastic tray that affords product visibility from six sides. Trade-named Plasti-Lok, the container is made from Plax Corp.'s "Polyflex" biaxially oriented polystyrene and was developed by Charles Palmer & Associates. The tray can be used, with or without overwrap, for a wide variety of products, including foods. Container Corp. reports that it will manufacture die-cut blanks, either printed or plain. The blanks are then cold formed and locked at customers' plants. *Container Corp. of America, 38 S. Dearborn St., Chicago 3.*

Wide-range, high-speed labeler

Reported to be capable of labeling speeds up to 1,000 per minute is Crompton & Knowles' Model CKMD labeling machine. The new unit automatically applies spot or wrap-around labels to cans, jars or bottles, including aerosol containers. Self-leveling label beds automatically compensate for varying label thicknesses. Another feature which is said to contribute to trouble-free operation of the machine is a stainless-steel paste belt which is quickly removable for cleaning. According to the supplier, this belt does not drag on labels during interruptions to the supply of containers. A label box adjustable at each end is claimed to offer precise alignment of labels even when they are trimmed in crooked fashion. *Crompton & Knowles Packaging Corp., Holyoke, Mass.*



Spot-label printer-applicator

Designed to reduce time and labor costs and to simplify coding is Wrapak's new TAP label-applying printer. The portable unit prints, dispenses and applies pressure-sensitive spot labels for coding merchandise. Weighing less than 2 lbs., the unit is $4\frac{1}{2}$ in. high and $7\frac{1}{2}$ in. long. In a single swift operation, says the supplier, the new unit does the imprinting, dispensing and applying job faster and more accurately than by present methods. The machine's imprinting attachment can accept up to five lines of removable 10-point type, eight characters to a line. Roll-fed labels range from $\frac{1}{2}$ by $\frac{1}{2}$ in. to $1\frac{1}{2}$ by $1\frac{1}{4}$ in. *Wrapak Div., Wrapture, Inc., 133-30 32nd Ave., Flushing 54, N.Y.*

15 new polyethylene formulations

Koppers' Plastics Div. reports that 15 new formulations of its low-density and medium-density polyethylenes are now available in commercial quantity. They bring to 33 the number of polyethylene formulations offered by the company. They are Dylan polyethylenes 1350, 2012, 2020, 2025, 2027, 2029, 2038, 2040, 2046, 2050, 3046, 3102, 4042, 1014-A and 2014. Dylan 1350 is suggested for extremely fast flow injection molding; Dylan 2012 and 2020 for use where added stiffness is required for molded parts. Dylan 2025, 2027 and 2029 are resins for producing clear films by blown film extrusion, intended primarily for packaging uses where clarity and high impact strength are desirable. Dylan 2038, a film-grade resin, is designed for chill-roll extrusion. Dylan 2046 and 3046 are suggested for the production of such items as drapes, tablecloths and shower curtains. Dylan 2040, 2050 and 4042 are injection-molding grades for the production of closures and aerosol-can pressure buttons. Dylan 3102 is recommended for injection molding jobs where quick mold release is important. Dylan 1014-A is a black master batch for blending with natural resins to provide black film, pipe or moldings. Dylan 2014 is a black, low-density pipe-grade resin. *Koppers Co., Inc., Plastics Div., Koppers Bldg., Pittsburgh 19.*

Product plus liquid in film pouch

Handipak is the name given by Packaging Services to a new unit package which consists of product and liquid in a flexible-film pouch. According to the company, it offers manufacturers in many fields an inexpensive disposable unit package that also is suited to sampling and market testing. A high-speed packaging machine, which inserts the product, fills the liquid and seals the pouch, has been developed by the company. Now being run off by the firm is

[*Continued on page 176*]



INTERCHEM

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FOR METAL EDGE CONTAINERS

Metal Edge Industries, Barrington, N. J., has been a satisfied user of IC* Boxboard Coatings for many years because they add importantly to the durability and merchandising value of METAL EDGE containers.

In addition to imparting rich color and high gloss, IC Boxboard Coatings improve printability and ink hold-out, provide resistance to oil, moisture, mild acids, grease, smudging and abrasion; and actually increase the Mullen burst strength of the board by an appreciable amount. From warehouse to workbench, these boxes are built to take a beating.

Learn what IC paper and foil coatings can do for YOUR package. Write for details TODAY!

Interchemical
CORPORATION
Finishes Division

Headquarters Office: 224 McWhorter Street, Newark 5, N. J. Factories: Chicago, Ill. • Cincinnati, Ohio • Elizabeth, N. J. • Los Angeles, Cal. • Newark, N. J. • Mexico City, Mex. In Canada these products are made by Aulcraft Paints Limited, Toronto, Ontario and sold under its trademark. *IC is a trademark of Interchemical Corporation.

Announcing the new 1961 Modern Packaging Encyclopedia Issue

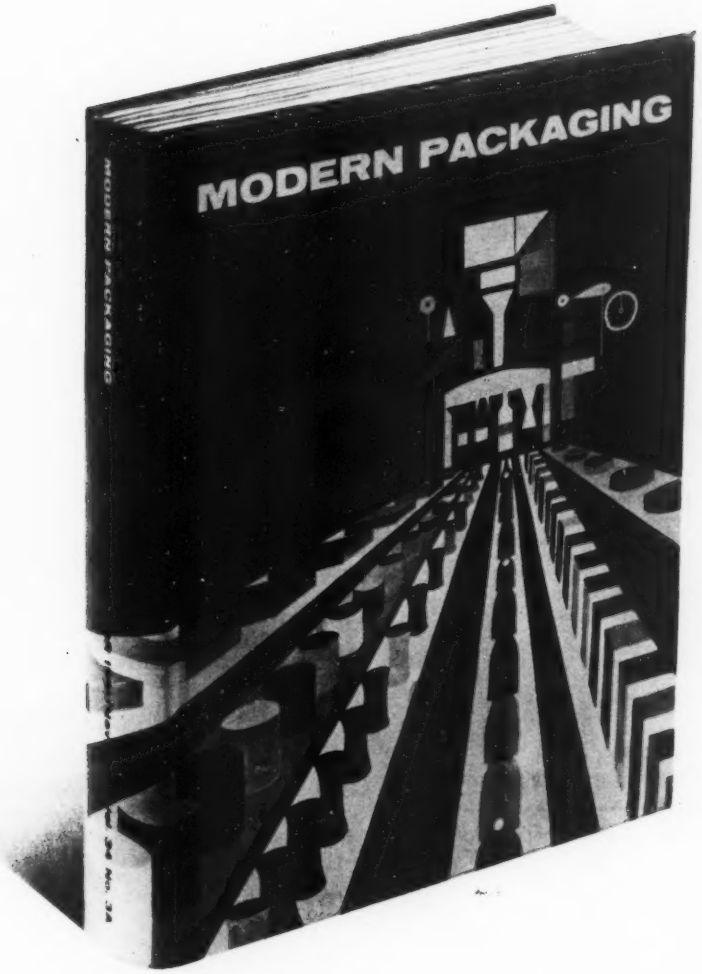
The One and Only Complete Reference

• Off the press starting late November . . . the 1961 MODERN PACKAGING ENCYCLOPEDIA ISSUE . . . the workbook of the packaging field since 1929. Often referred to as the "Bible" of the packaging field . . . the new 1961 issue encompasses articles on every subject of interest to every member of the packaging community. Updated in every respect, its variety is typified by new articles such as . . .

. . . A survey of 86 Packaging Using Companies which details their organization, trend of packaging thinking, growth pattern, allocation of packaging costs and major objectives.

. . . A Basic Guide to Filling machines for Dry products, Liquids, Viscous Products. 20 pages of charts detailing which company produces what machine, its applications and specifications.

. . . An article on The Effective Management of New Packages prepared by a nationally recognized management engineering firm.



Book for the Packaging Community

Editorial Departmental listings for the 1961 Issue include:

- . . . 11 pages on Trends and Developments
- . . . 27 pages on Developing the Package
- . . . 19 pages on Paper, Paperboard & Coating
- . . . 29 pages on Films, Foils and Laminations
- . . . 15 pages on Adhesives and Tapes
- . . . 16 pages on Paperboard Packages
- . . . 10 pages on Flexible Packages
- . . . 30 pages on Plastic Packages (molded and sheet)
- . . . 13 pages on Metal Packages
- . . . 22 pages on Glass Packages, closures and caps
- . . . 16 pages on Aerosols, Valves and Propellants
- . . . 64 pages on Machinery of Packaging
- . . . 10 pages on Accessory and Specialty Equipment
- . . . 15 pages on Package Making Equipment
- . . . 25 pages on Designing, Printing and Decorative Packages
- . . . 10 pages on Labels, Seals, Tags and Display
- . . . 22½ pages on Protective Packaging

plus 354 pages of informative, idea developing advertising for a grand total of over 880 pages of packaging information.

For further details on how to receive the 1961 MODERN PACKAGING ENCYCLOPEDIA Issue refer to page 208A and 208B or write Subscription Manager.

MODERN PACKAGING

The Complete Authority of Packaging—A Breskin Publication

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FOR PROTECTIVE
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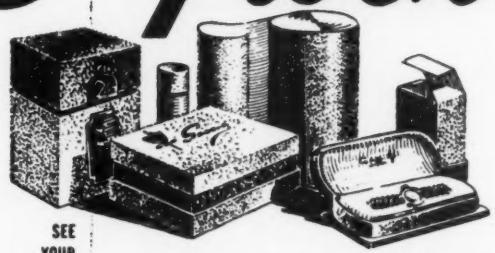
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Peter Partition Corp. operates one of America's largest plants devoted exclusively to the production of cardboard partitions.

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Manufacturers of Cardboard Partitions
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Telephone: TRiangle 5-4033

The Packaging Industry's Magic Carpet!

CLAREMONT Flock



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Flock-Affixed Papers ...IN ROLLS
Boxboard ...IN SHEETS
(18 brilliant colors)

—Claremont Flock . . . these tiny clipped-lengths of luxurious cotton and regal rayon. We market this irresistible outer raiment in bulk to paper processors, product manufacturers, packaging specialists and display builders who, for dramatic enrichment, apply it to paper, glass, metal, cork, plaster and similar materials.

Flock is a fascinating stimulant—and for pennies, an ounce adds a pound of allure. Check your suppliers—or, for complete information, feel free to contact us direct.

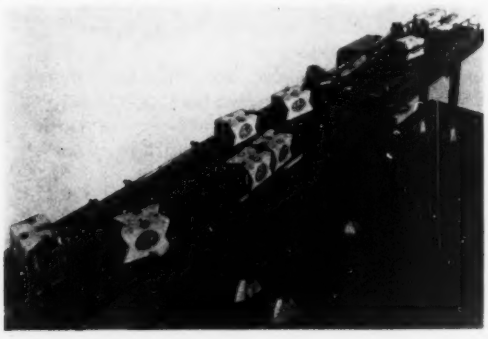
CLAREMONT FLOCK CORPORATION
The Country's Largest Manufacturer of FLOCK
CLAREMONT, NEW HAMPSHIRE

Equipment & Materials (*Cont'd from page 172*)

a film pouch containing a small sponge immersed in various liquid solutions, for use by packagers of such products as nail-polish remover, suntan lotion, insect repellent, metal cleaners and spot removers. For details, contact *Packaging Services, Inc., Wilmington 99, Del.*

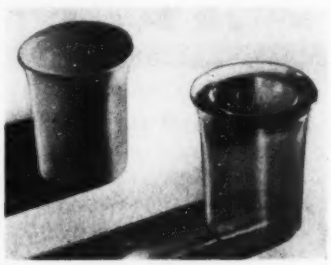
New unit for channeling six-packs

A high-speed automatic machine which reportedly feeds up to 250 six-pack containers per minute into a case loader is offered by Hi-Speed Checkweigher. The equipment consists of three units: a line converger that receives up to 125 six-packs per minute from each of two lines, a balanced line divider that automatically separates the six-packs into two balanced lines, and a turner which rotates the six-packs 90 deg. for infeed to the case loader. The balanced line divider (right center in the accompanying photograph) is unusual, says the supplier, in that the divider arms exert almost no pressure on the six-packs as they pass through. Six-packs coming from the line converger (upper right) are carried forward by the conveyor belt rather than by pushing each other, and are gently guided by the divider arms into two separate lines. This feature, the company notes, is particularly important to users of lightweight glass containers. *Hi-Speed Checkweigher Co., Ithaca, N.Y.*



Stylized aerosol overcap

Designed to complement high fashion design in contemporary aerosol containers is Walter Frank's new plastic aerosol overcap. The new proprietary cap, molded of high-impact polystyrene, features a reverse flare with a slightly concave top. This construction is calculated to enhance the overcap's appearance while leaving a good surface for price marking. Available in a wide range of colors, the new aerosol-container overcap also is offered in clear polystyrene. It can be obtained in two internal-diameter sizes, to fit steel or aluminum mounting cups. For additional data, contact *The Walter Frank Organization, Hillside, Ill.*

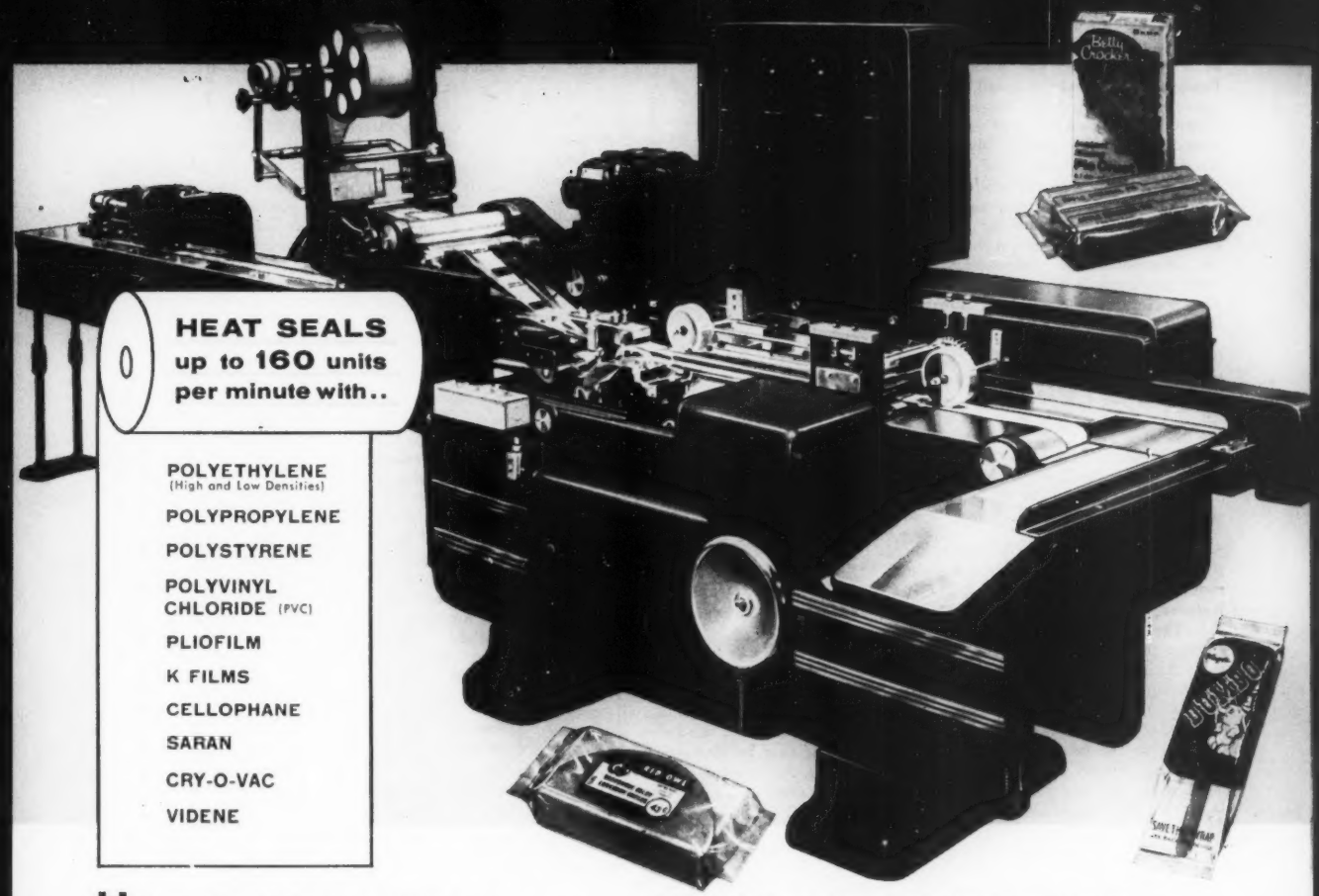


Protective disks for cosmetic jars

A line of protective vinyl disks for cosmetic jars, designed to prevent the creamy product from transferring to the inside of the screw cap, is available from Busse Plastics. The disks retard product evaporation and enhance package appeal, says the supplier. Disks are available printed or plain, or embossed with brand name. They can be fabricated with or without pull tabs and with grooved edges for close contact to walls. *Busse Plastics Co., 64 E. 8 St., New York 3.*

NOW- there's practically NO LIMIT to the types of flexible films you can Speed-Wrap and Heat-Seal on the FMC Campbell WRAPPER

...INCLUDING SHRINK FILMS!



HEAT SEALS up to 160 units per minute with..

- POLYETHYLENE (High and Low Densities)
- POLYPROPYLENE
- POLYSTYRENE
- POLYVINYL CHLORIDE (PVC)
- PLIOFILM
- K FILMS
- CELLOPHANE
- SARAN
- CRY-O-VAC
- VIDENE

High speed packaging up to *160 units per minute* with almost every type of heat-sealable flexible material—*including shrink films*—is now possible on the CAMPBELL Wrapper. Exclusive method of "float" wrapping from continuously fed roll stock permits trouble-free packaging production without static interference slow down or stoppage as in many reciprocating or sheet fed processes. It also minimizes product damage and waste. Constant automatically regulated heaters and controlled dwell-time insure positive longitudinal and cross-sealing of all materials. Special tunnel attachment provides for shrink films. Let us show you how the CAMPBELL Wrapper can wrap and seal an amazing range of product shapes in neat, close-fitting attractive wraps in less time, with less labor and with less material.



Quick Conversion from Poly to Cello

A capable machine operator can convert from Poly to Cellophane by simply installing a set of crimpers with heaters and a stationary tube sealing unit — *all in less than 30 minutes!*



FMC Campbell WRAPPER

Putting Ideas to Work

fmc FOOD MACHINERY AND CHEMICAL CORPORATION

FMC Packaging Machinery Division

Hudson-Sharp Machine Company
1201 MAIN STREET, GREEN BAY, WISCONSIN



For Your Information

Arrangements for the second **Bachner Award Competition** have been announced by **Chicago Molded Products Corp.**, sponsor of the event. Established as a testimonial to the work of the Bachner brothers who founded the company 41 years ago, the object of the award is to "stimulate and encourage imaginative employment of plastic materials in the initiation and improvement of products and the production of those products." The trophy and $1,000 in cash will be awarded for the outstanding plastics application in successful commercial use. Information and entry applications are obtainable from **The Society of the Plastics Industry**, 250 Park Ave., New York.

Opening session of the 21st annual meeting of the **Fibre Box Assn.** was devoted to the subject of merchandising and marketing. The final day of the two-day event, Oct. 11-12, at New York's Waldorf Astoria, featured a discussion of the corrugated-box business in Sweden by the director of that country's corrugated-box association.

A new graduate program in packaging is being offered by the Dept. of Food Science in The College of Agriculture, **Rutgers University**, New Brunswick, N.J. The program is designed to emphasize the importance of the properties, characteristics and performance of packaging materials. Included are production techniques, application engineering, testing procedures and quality control, as well as economic and merchandising aspects. Packaging research in the Food Science Dept. also is being expanded. The program is headed by **Dr. Edward A. Nebesky**, professor of food science and a packaging specialist. Further information on the program can be obtained from College of Agriculture and Experiment Station, Rutgers University, New Brunswick, N.J.

In recognition of his contributions to the industry and his service as the association's pres. during the past year, **Russell A. La Mantia** was honored at a reception given during the recent 10th annual convention and exposition of the **Produce Packaging Assn.** in Miami Beach, Sept. 11-14. Some 60 exhibitor booths and several "live" packaging lines were featured at the exposition, which included a large display of equipment, machinery and packaging-materials developments.

The 1961-62 catalog of the **Rochester Institute of Technology** announces a full-scale program of flexographic instruction in its school of printing. The **Flexographic Technical Assn.** has been assisting the institute in the preparation of a syllabus and was instrumental in obtaining the necessary material and equipment from member firms, both on gift and long-term-loan bases. For more information, write **Byron G. Culver**, head of RIT's School of Printing in Rochester, N. Y.

Blow molding will be the topic of a regional technical conference to be held Nov. 18 at the Essex House in Newark, N. J., by the **Society of Plastics Engineers.** The program on "Blow Molding Comes of Age" will cover such topics as history, applications, extrusion techniques, materials technology, machinery, blow processes and molds.

SPE has made available a two-color, 16-page brochure called "Professional Activity Groups—Your Opportunity to Grow Professionally in Plastics." The bulletin outlines the function, advantages, organization and operation of professional activity groups in general and indicates the scope and activities of the 15 currently organized groups, each composed of SPE members with common interests in particular segments of the plastics industry. Copies are available without cost from the society at 65 Prospect St., Stamford, Conn.

"An Analysis of the Complete Packaging Operation" was the theme of the combined fall meeting of the production-line committees of the **Packaging Institute**, held at the Biltmore Hotel in New York, Sept. 22-23. A panel discussion on "What Top Management Expects from the Packaging Operation" was a highlight of the event, which was presided over by **Howard W. J. Baines** of E. R. Squibb & Sons, gen. chairman of the four regional committees.

The 74th Annual Convention of the Printing Industry of America, Inc., was held at the Sheraton-Park Hotel in Washington, D.C., Oct. 24-28. The event is sponsored by the **Printing Industry Education Exhibits Corporation.**

The **American Society for Metals** recently dedicated its new national headquarters in Geauga County, near Cleveland. The 31,691-member technical society is devoted to improving technology in materials and their related processes and products through dissemination of engineering information to members in the metal-working industry. The organization publishes monthly reviews on metals engineering, runs a Metals Engineering Institute and maintains the ASM Foundation for Education and Research, supporting metals-engineering scholarships and awards. **Walter Crafts** of Union Carbide Metals Co. is pres. of the society.

Jan. 16, 1961, has been set as the deadline for entries for the 11th Lithographic Awards Competition sponsored by the **Lithographers & Printers National Assn.** Some of the 51 lithographic-material classifications have been reorganized, others eliminated. Winners of the 1961 competition will be announced at the LPNA convention in Phoenix, Ariz., May 2.

The results of a recent study by the label manufacturers div. of LPNA have revealed the contribution that improved production techniques and methods for labels and wraps have made toward better merchandising of products. According to the association, labels produced under the controlled conditions prevailing today "have led to real cost savings in labeling line and machine operations for label users."

With total output up 90% in the past decade, the package-supplying industries are growing in Australia, according to a study recently released by the **New South Wales Government Office.** The 58-page report analyzing the country's current packaging picture is divided into six major packaging categories and gives specific information on each industry. Included with charts, statistical indices and illustrations is a list of more than 100 packaging-materials manufacturers in Australia. *The Australian Packaging Industries* was prepared by the Australian Dept. of Trade and is available without cost from the New South Wales Government Office, Dept. G., 680 Fifth Ave., New York.

The Packaging Div. of the **American Management Assn.** has postponed its packaging management course until Feb. 13-17, 1961. It was originally scheduled to take place Oct. 31-Nov. 4 of this year. Further details are available from AMA headquarters at 1515 Broadway, New York.

The **Institute of Food Technologists** is devoting its Nov. 16 meeting in New York to a four-part panel presentation on "Vending Food and Beverages—a

Events

Oct. 31-Nov. 2—**Packaging Institute**, 22nd National Packaging Forum, Statler-Hilton Hotel, New York.

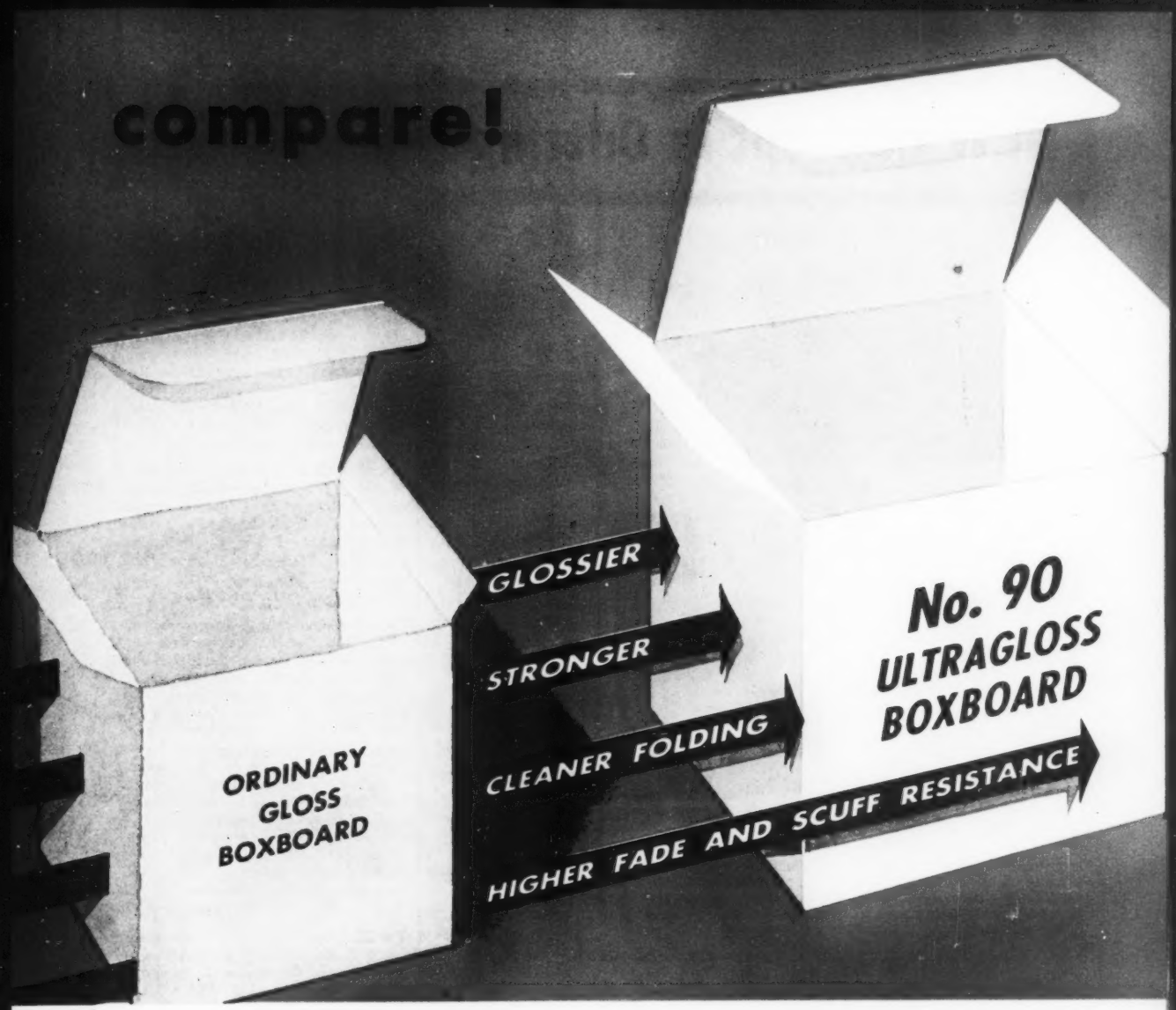
Nov. 1-3—**Point-of-Purchase Advertising Institute**, 14th annual symposium and exhibit, New York Coliseum.

Nov. 1-3—**Packaging Assn. of Canada**, 9th Canadian National Packaging Exposition, Automotive Bldg., Exhibition Park, Toronto.

Nov. 14-17—**International Exposition of Soft Drink Industry**, Cobo Hall, Detroit.

Nov. 27-30—**Super Market Institute**, mid-year conference, Diplomat Hotel, Hollywood Beach, Fla.

Dec. 3-9—**Chemical Specialties Mfrs. Assn.**, 47th annual meeting, Hollywood Beach Hotel, Fla.



Compare No. 90 Ultragloss Cartons With Those of Other Gloss Boxboards...

THE DIFFERENCES ARE PLAIN TO SEE!

Lowe's No. 90 Ultragloss is the only brilliant-finish boxboard made by a mill specializing in packaging products. That quite probably may be why, in comparative tests, No. 90 Ultragloss proves superior to other boards in at least six important qualities. They include higher brightness and gloss . . . cleaner folding . . . considerably greater strength. They also include higher fade resistance . . . exceptional lacquer, varnish, and gloss ink support . . . greater and more uniform ink scuff resistance. And the price is favorable too. Specify Ultragloss for the best!

Samples are yours for the asking—from us or any independent boxmaker.

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LOWE PAPER COMPANY

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NEW Concept in Cutting



with
"HYTRONIC" CUTTING MACHINES

Now! The combination of electronics and hydraulics opens up new opportunities to improve cutting quality and lower your cutting costs. The Hytronic cutting machine gives your operators exact pattern control . . . means precision cut parts in ply thickness up to 2¼ inches . . . parts that simplify assembly and cut your reject costs.

Here's what the HYTRONIC machine can do for you:

- **Eliminates Pattern Tracing** . . . Hytronic die cutting machines save pattern tracing time . . . Die duplicates pattern shape every time, eliminates possibility of error.
- **Power and Smoothness** . . . The speed of electronics and the power and smoothness of hydraulics mean fast one-stroke cutting that's easy to control . . . simple to operate.
- **Extremely Accurate Cutting** . . . Hytronic die cutting machines give you precision parts uniformly cut in stacks or lays up to 2¼ inches thick . . . simplify assembly and cut reject costs.
- **Versatility of Die Heights** . . . Built-in versatility of the Hytronic cutting machine eliminates beam adjustment for varying die heights . . . speeds your production when switching from high to low die heights.
- **Cuts Almost all Materials** . . . The Hytronic cutting machine, capable of 30,000 lbs. hydraulic pressure, easily cuts a wide range of materials including aluminum, asbestos, copper, paper, linoleum, plastic, plywood, cloth, leather, masonite, rubber . . . cuts with exact uniformity from top to bottom.

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F.Y.I. [*Continued*]

Challenge to the Food Technologist." Food and beverage processing and packaging will be discussed by **Dr. Stanley Segall** of Rudd-Melikian.

Printer members of the **Flexographic Technical Assn.** are currently submitting entries to FTA's second annual awards competition. Entries will be judged on the basis of technical flexographic achievement in the product classifications of foil, film, paper, paperboard, solid fibre and/or corrugated. FTA plans to feature the competition winners in regional "Flexo Workshops" throughout the country following award announcements at the association's third annual meeting, Feb. 7 in New York.

Chicago's La Salle Hotel was the scene recently of three **American Management Assn.** packaging seminars. Held concurrently, Sept. 28-30, the courses dealt with "The Job of The Packaging Director," "Package Production Planning, Scheduling and Controls" and "Plastic Containers for Packaging."

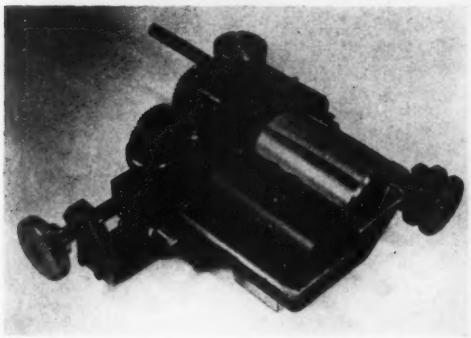
Some 400 industrial designers and industry executives heard case studies illustrating how major industrial and consumer-goods companies use design in their marketing programs at the 16th annual conference of the **American Society of Industrial Designers** in Chicago. Held at the Edgewater Beach Hotel, Oct. 27-28, the meeting concentrated on the contributions that industrial design can make toward corporate profits. **William Goldsmith** of Dave Chapman, Inc., and **Jay Doblin** of the Illinois Institute of Technology, were co-chairmen of the event, which featured presentations by Aluminum Co. of America and Olivetti Corporation.

The 22nd Dairy Industries Exposition is being held in Chicago's International Amphitheatre, Oct. 31-Nov. 5. Sponsored by the **Dairy Industries Supply Assn.**, the show features more than 350 exhibitors from the U. S. and Canada and includes many packaging-equipment manufacturers.

"To increase consumer and trade acceptance of the many new and varied convenience foods," a **Packaged Convenience Foods Institute** has been formed under the sponsorship of **Continental Can Co.'s** Flexible Packaging and Folding Carton Divs. The new customer service will be used as a "clearing house of information on convenience foods." For further information, contact the institute at 551 Fifth Ave., New York 17.

A new 16-page "Multiwall Packaging Guide," containing information on the basic types of multiwall bags, chief types of closures for them and proper storage and handling, railway-car and truck-trailer bag-loading systems and multiwall packaging equipment, has been published by **Bemis Bro. Bag Co.** The illustrated paper-back booklet is available at no cost from the company at 408 Pine St., St. Louis.

FLEXOGRAPHIC EDGE PRINTER

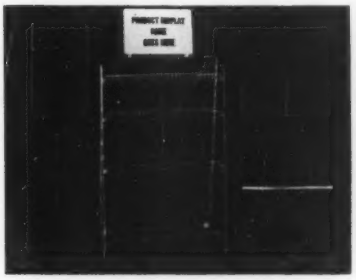


One (1) color, 4-Inch Edge Printer designed to meet the most exacting specifications. This miniature press, a compact unit, will fill all requirements of edge printing. Precision engineered, ingeniously designed, it features an ink fountain, a two-piece casting that is non-splash and leakproof. Built to operate in conjunction with other equipment, the simplicity of the Manhasset Edge Printer assures trouble-free, superlative performance, ease of operation, high quality printing. Many now in use here—and abroad. Re-orders attest to their success. Moderately priced, available on short order. Send for our brochure on all types of Flexographic Printers and Bag Machines which we tailor to your particular needs.

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409 Bayview Avenue, Amityville, New York

If it's made of **WIRE** . . . *get in touch with* **FASFORM**



Just tell us what you need, and if it can be formed with wire we'll give you a blueprint and a cost estimate. Write Fasform Formed Wire Products Division, Heller Roberts Manufacturing Corp., 6115 Carnegie Ave., Cleveland 1, Ohio.

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It's a landslide for ACME! Package printers who want the best in rotogravure cylinders, buyers who demand the finest in national preprints, invariably choose the quality house, ACME! Get on the ACME bandwagon . . . see for yourself the difference that quality workmanship, service and prompt delivery can make in your profit picture.

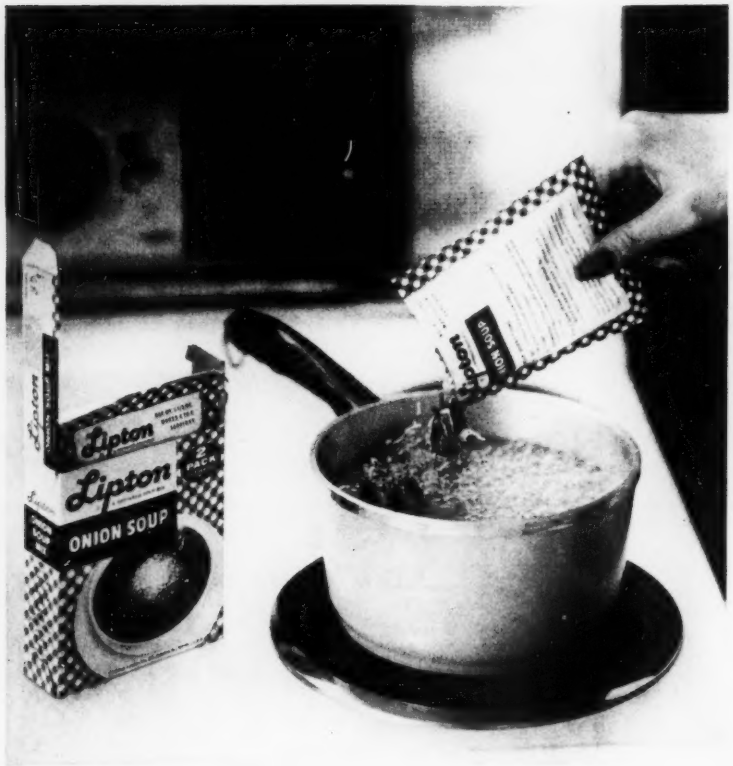


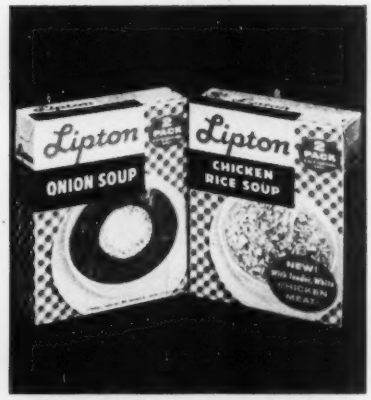
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How Weyerhaeuser Ingenuity Helps Lipton Meet High Packaging Standards

Prepared Soup-Mix Presented Marketing Problems Lipton has Solved Most Successfully





SOUP'S ON. Lipton Soups in striking Weyerhaeuser 4-color folding cartons changed America's eating habits. With high shelf-appeal, they attract millions of self-service shoppers.



"BRISK" Lipton Tea. Black tea, green tea, bulk or bagged—it's Lipton's in Weyerhaeuser cartons. Precise color, register, and clean reproduction say "quality" unmistakably.



THIS FOLDER YOURS FREE. See for yourself how Weyerhaeuser works with Lipton—how Weyerhaeuser can work with you.

Folding cartons do many things well, but—until Lipton introduced its now-famous "red table cloth" carton—it often was difficult for shoppers to visualize "a steaming bowl of soup in a box."

Because impulse-buying is so important to soup-mix sales, the Lipton Advertising Department worked closely with Frank Gianninoto & Associates, nationally known designers, in developing an attractive carton design that created a feeling of roundness and expansion. A bowl of steaming soup was enticingly illustrated in full color.

This design was submitted to Weyerhaeuser—a leading producer of Lipton tea cartons for over 10 years—for trouble-free volume-manufacture and use. Essential were exact color conformity . . . accurate register . . . close dimensional tolerances . . . uniformity of stock for quick filling-closing . . . durable shelf-life . . . dependable deliveries on schedule. Lipton knew from experience they could depend on Weyerhaeuser to meet these established high standards.

If you, too, want packaging peace of mind, look to Weyerhaeuser!

In packaging **Weyerhaeuser** (Ware'-hous-er) is pronounced **Ingenuity** (In-je-nu'-i-ty)

Weyerhaeuser Company

Boxboard and
Folding Carton Division

Headquarters:
919 N. Michigan Ave., Chicago 11, Ill.

FAST SETTING QUICK DRYING

SPEED KING

CARTON INKS

FOR LETTERPRESS AND OFFSET

The quick set, fast dry and high gloss of IPI's revolutionary Speed King inks for general commercial use are now available to package printers!

Speed King Carton inks set so fast—even on patent coated boards—that offset rarely is a problem. This means higher press loads without racking, less handling, and considerably less spray than needed for conventional gloss carton inks.

Speed King's gloss on clay coated and on cast coated stocks such as LUSTERKOTE, KROMEKOTE, ULTRA-GLOSS, etc., rivals that of the finest gloss carton ink. And because it's a more *uniform* gloss, even lower cost stocks print better!

Speed King's split-second set and amazing dry (as little as 2 hours) mean faster processing of the printed board—with obvious advantages to the carton printer.

Speed King is stable on the press; halftones don't muddy up, small type stays open.

These wonderful new inks—both letterpress and offset—are now available from your nearest IPI branch, in a wide range of popular carton colors.

Try them on a really tough job—and see the definite difference!

IPI, IC and Speed King are trademarks of Interchemical Corporation



CORPORATION DIVISION

EXECUTIVE OFFICES, 67 WEST 44th STREET, NEW YORK 36, N. Y.

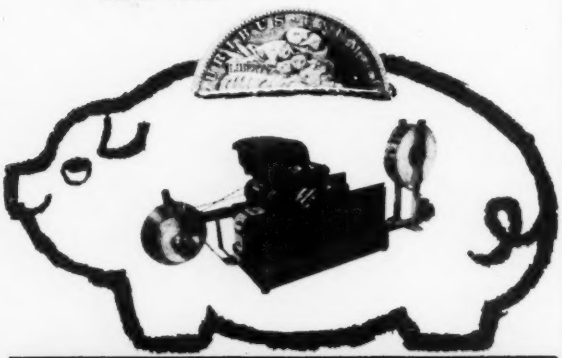


SAVE 45% LABELING COST with the KIMBALL PRE-MARKED SYSTEM!



Send for this startling case history today!

See how this manufacturer saved 20% on initial master label costs and shaved 80% off the cost of secondary printing—for a net saving of 45% on material and labor costs.



SEND FOR YOUR COPY NOW!

A. KIMBALL COMPANY, REWE ST., BROOKLYN 11, N.Y. Dept. MP-2

Specialists in Product Identification and Integrated Data Processing

Offices in New York, Chicago, Los Angeles and other principal cities in U. S.

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☐ Please send me free copy of "28 labels for 1,457 items."

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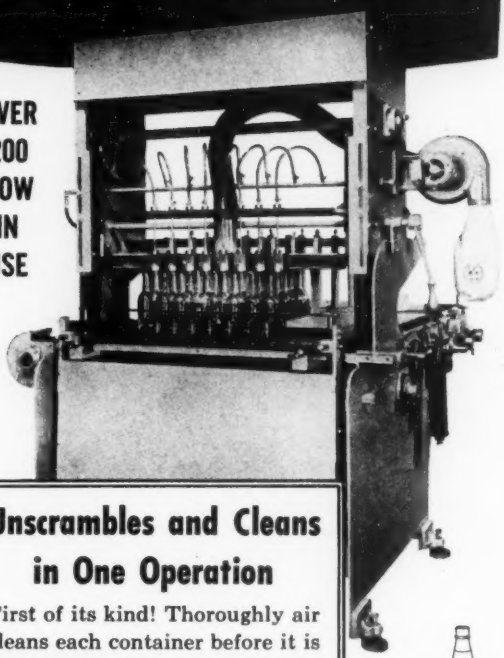
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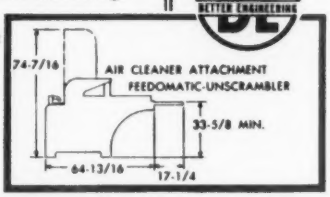
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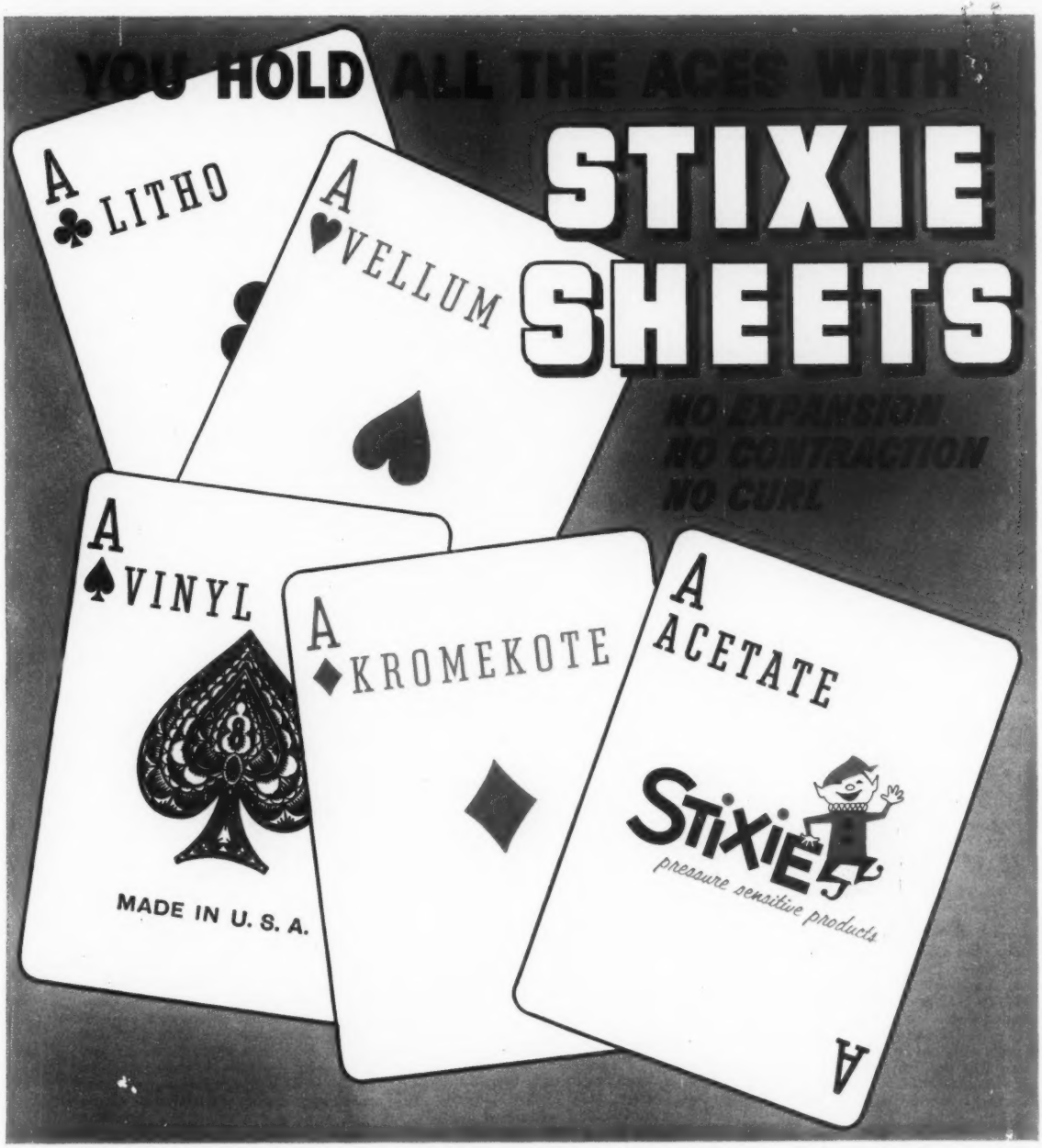
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U. S. Patents Digest

This digest includes each month the more important patents of interest to packagers. Copies of patents are available from the U. S. Patent Office, Washington, D. C., at 25 cents each in currency, money order or certified check. Postage stamps are not accepted. Edited by H. A. Levey.

Apparatus and Method for Treating Interior Surfaces of Glass Containers, Joseph F. Greene and Arthur L. Hinson (to Owens-Illinois Glass Co., Toledo, a corporation of Ohio). U.S. 2,947,117, August 2. A method of treating the interior surfaces of hollow glass containers having open ends therein during continuous travel of the containers to and through an annealing lehr to reduce the alkalinity on said interior glass-container surfaces.

Machine for Filling and Charging an Aerosol Container and for Sealing the Latter, John Richard Focht (to Precision Valve Corp., Yonkers, N.Y., a corporation of New York). U.S. 2,947,126, August 2. An aerosol charging and sealing machine comprising means for supporting a container having a top opening with a valved cap loosely engaged therewith.

Cap-Applying Apparatus, Henry H. Franz and Lee D. Pierce (to Sealright-Oswego Falls Corp., Fulton, N.Y., a corporation of New York). U.S. 2,947,128, August 2. Apparatus for applying caps to bottle tops including a base, a cap magazine vertically mounted on said base for receiving a stack of nested caps having radial flanges vertically spaced from each other, said base having a vertical capping throat spaced laterally from said magazine.

Carton Flap Deflecting and Separating Means, Dominic J. Caresio (to Fibreboard Paper Products Corp., San Francisco, a corporation of Delaware). U.S. 2,947,229, August 2. Apparatus for transforming a collapsed carton having pairs of major and minor flaps at an end thereof with one major flap and one minor flap positioned on each side of said collapsed carton from the collapsed state to the erected state.

Can-Body Fluxing Mechanism, Delbert E. Wobbe and Frank P. Fallar (to American Can Co., New York, a corporation of New Jersey). U.S. 2,947,274, August 2. A mechanism for solder fluxing the side seams of container bodies, said mechanism including a horn for supporting a can body at a fluxing station and a rotatable flux-applying roll of substantially the length of the can body disposed adjacent the horn at said station for fluxing said side seam in a single operation.

Method of Producing Can Body Blanks with Spacing Projections, John J. Loughney (to American Can Co., New York, a corporation of New Jersey). U.S. 2,947,276, August 2. The method of producing stacks of sheet-metal can-body blanks to prevent sticking thereof during successive feeding of individual blanks from the stacks.

Shipping Container with Side Closure, Richard H. Johnson (to Container Corp. of America, Chicago, a corporation of Illinois). U.S. 2,947,414, August 2. In a heavy-duty container, a hollow body member having a plurality of vertical sides, one of said vertical sides comprising panel portions extending from one end of the body member to the other.

Compartmented Carton, Charles H. Turpin (to The Pillsbury Co., Minneapolis, a corporation of Delaware). U.S. 2,947,461, August 2. A siftproof compartmented container resistant to the passage of moisture and gases, which container comprises opposite front and back walls and intermediate end walls.

Closure Lids for Paper Containers, Charles S. Conklin (to Lily-Tulip Cup Corp., New York, a corporation of Delaware). U.S. 2,947,463, August 2. A one-piece closure lid composed of relatively stiff thermoplastic material, such as polystyrene, comprising an integrally formed rigid closure end portion and a rigid peripheral rim portion for co-operative closure engagement with a paper container having a flared lip.

Packaging, Roger Wells (to Diamond National Corp., a corporation of Delaware). U.S. 2,948,094, August 9. The method of handling and packaging rolls of web material comprising moving first groups of a plurality of axially aligned rolls in an axial direction, separating individual rolls in said first groups, and moving said separated groups in a transverse direction while maintaining their alignment.

Mechanism for Feeding and Covering Containers, Andrew W. Anderson (to Scandia Packaging Machinery Co., North Arlington, N.J., a corporation of New Jersey). U.S. 2,948,096, August 9. In a machine for feeding and covering containers, a support, means for feeding containers along said support, and means in conjunction with said feeding means for engaging and holding down the rear edges of said containers.

Box Opening and Dumping Apparatus, Bruce G. Copping (to Atkron, Inc., Cuyahoga Falls, Ohio, a corporation of Ohio). U.S. 2,948,425, August 9. Apparatus for automatically opening closed and filled paperboard boxes having a pair of side-closing flaps and a pair of inner end-closing flaps, which apparatus comprises a frame.

Container-Feed Apparatus, Theodore George Klink (to American Cyanamid Co., New York, a corporation of Maine). U.S. 2,948,435, August 9. A container-feeding apparatus for bottles, vials, ampoules and the like, fed individually under controlled feed conditions from a side-by-side relationship in a gravity chute to a processing station wherein the chute is removably attached to the apparatus and is adapted to discharge a container from its lower end.

Reinforced Glass Aerosol Container and Method of Making Same, William S. Glover and Joseph F. West (to Wheaton Glass Co., Millville, N.J., a corporation of New Jersey). U.S. 2,948,439, August 9. A container adapted to contain a product under pressure to be dispensed in aerosol form, comprising a frangible bottle having a discharge opening, said bottle having at least one linearly projecting ridge.

Snap-Lock Closure for a Rectangular Container, Charles V. Grisetti and William J. Langton (to Crown Zellerbach Corp., San Francisco, a corporation of Nevada). U.S. 2,948,456, August 9. A blank of foldable material for forming a rectangular container with a snap-lock closure, comprising opposing pairs of side and end walls.

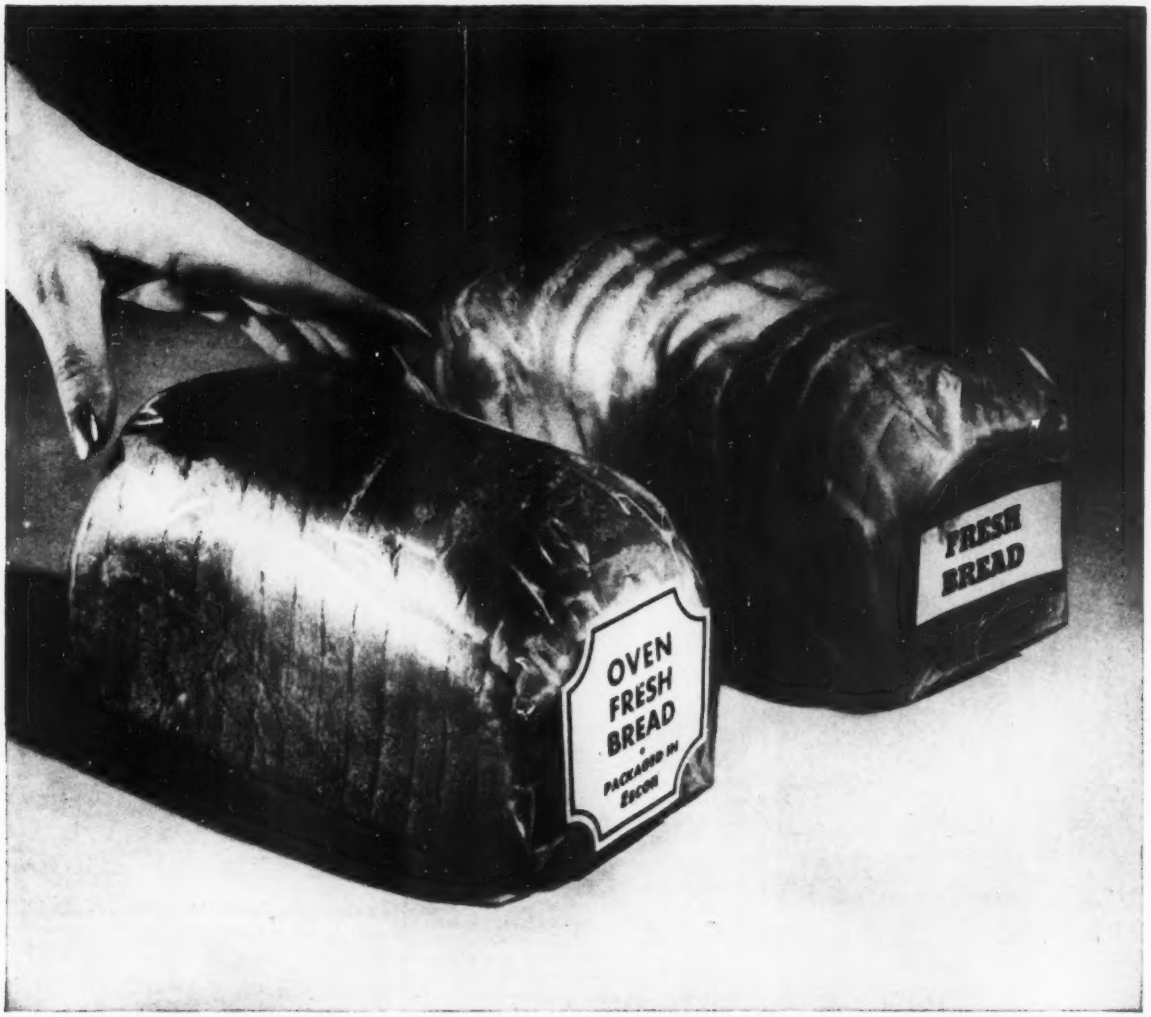
Heater for Wrapping Machine, Michael Zwarycz (to Crompton & Knowles Packaging Corp., Holyoke, Mass., a corporation of Massachusetts). U.S. 2,949,001, August 16. In a wrapping machine to operatively place a thermoplastic wrapper around a package movable from a wrapped-package receiving station to a wrapper heat-sealing station, a series of rotatable heating rolls to heat seal the wrapper.

Wrapper-Feed Mechanism, Michael Zwarycz (to Crompton & Knowles Packaging Corp., Holyoke, Mass., a corporation of Massachusetts). U.S. 2,949,002, August 16. In a wrapping machine having a vertically movable elevator for an article to be wrapped, means to supply sheets of wrapping material to be moved from a feeding station to a wrapping position over the elevator.

Display and Collapsible Carton, Francis J. Sloan (to Package Machinery Co., East Longmeadow, Mass., a corporation of Massachusetts). U.S. 2,949,218, August 16. A carton comprising two frames open at top and bottom and hinged together along one edge for swinging movement to and from superposed position and a side-by-side position.

Carton, Thomas Vander Lugt, Jr. (to KVP Sutherland Paper Co., Kalamazoo, a corporation of Delaware). U.S. 2,949,221, August 16. A carton formed integrally of paperboard cut and scored to provide a bottom, a front wall at one side edge of the bottom and an inner rear wall panel at its other side edge.

Packaging, George Howard Kraft, Harry W. Grossen and Kenneth Bell (to



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Here's another interesting use of versatile Escon! As sparkling clear film for bread wrap, Escon exhibits exceptional non-relaxing properties and retains its texture and shape. It doesn't become limp and saggy after repeated customer handling, or give an impression that one or more slices are missing as can be the case with other thermoplastic films. Escon can match or exceed the high speed output of any film on machines designed for polyolefins. In addition, it can simultaneously be heat sealed in multiple folds. Other properties of film made of Escon include superior moisture barrier that contributes to longer shelf life; controllable shrinkage; color printing and high surface gloss for extra eye-and-buy appeal. Escon can help produce better packaging film as well as benefit other plastic processors in many ways. Investigate Escon polypropylene today! Contact the nearest Enjay office.

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Patents [*Continued*]

National Dairy Products Corp., a corporation of Delaware). U.S. 2,949,372, August 16. A method of packaging cheese, which is in a heated, flowable condition, in a flexible wrapper; comprising the steps of folding a flat, flexible wrapper into an open fluid receptacle having a bottom wall, upwardly extending side walls and flaps respectively extending from each side wall.

Method and Apparatus for Forming and Filling Packages, Clarence W. Vogt, Watson, Conn. U.S. 2,949,713, August 23. A method of filling a package comprising placing an enwrapment between a mold element having a recess therein and a cover therefor, forming with said recess an enclosed mold cavity, and introducing fluent material under pressure into said mold cavity.

Container, Thomas W. Winstead (to Hedwin Corp., Baltimore, a corporation of Maryland). U.S. 2,950,029, August 23. A plastic container for liquids, powders and semi-solids, comprising a hollow rectangular container body of flexible, semi-rigid thermoplastic material, consisting of two symmetrical halves, each having wall portions respectively joined by formed corners.

Lined Carton and Method of Making the Same, John G. Vergobbi (to Pneumatic Scale Corp., Quincy, Mass., a corporation of Massachusetts). U.S. 2,950,036, August 23. A composite carton blank and lining sheet adapted to be assembled by wrapping the composite members about a forming block to provide a rectangular lined container having a bottom closure and remaining open at the top.

Packing Pad, Charles E. Rupp (to Packaging Corp. of America, Rittman, O., a corporation of Delaware). U.S. 2,950,038, August 23. A right-angularly foldable packing pad for article assembly with a container, said pad comprising at least two layer members of corrugated board, each of said layer members being provided on its inner face with a liner sheet and having intermediate its opposite side edges integral preformed folding hinge means defining two foldable portions of the container-pad layer members.

Receptacle, James C. Wilson (to Owens-Illinois Glass Co., Toledo, a corporation of Ohio). U.S. 2,950,039, August 23. A tubular receptacle having a polygonal cross-section and being formed of relatively stiff, sheet-like material, said receptacle comprising a main body member with a linear series of foldably connected side-wall panels assembled into closed configuration.

Wrap-Around Paperboard Carrier, Orison W. Stone (to Continental Can Co., New York, a corporation of New York). U.S. 2,950,041, August 23. A wrap-around paperboard carton for containers having caps, comprising a bottom panel, two side-wall panels and a top closing and locking flap extending from the top of each side-wall panel.

Carton, William A. Ringler (to Diamond National Corp., a corporation of Delaware). U.S. 2,950,043, August 23. A blank for forming a carton with a reclosable lid for packaging of cigarettes and similar articles.

MARKING EQUIPMENT FOR THE PACKAGING INDUSTRY

COZZONE



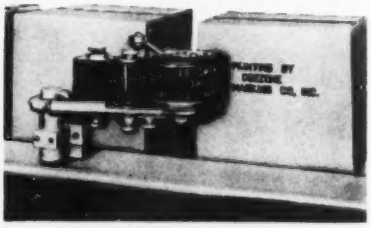
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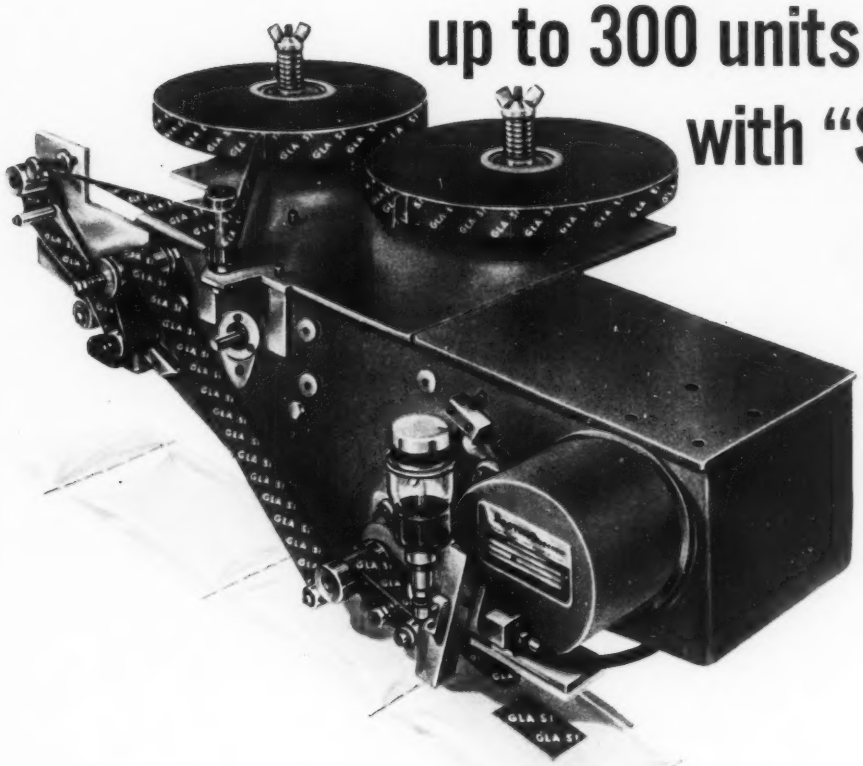
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Food additives

Continued from page 122

removal was the result of German studies that threw doubt—erroneously, as it turns out—on the safety of lower-order polymers in the resin. The publicity attending this disclosure, however, caused F&DA to take restrictive action and thus, ironically, what is perhaps one of the safest of all plastic resins has been forced through petition procedure.

This is the situation of the two polyethylene petitions:

The Committee On Food Additive Status of Polyethylene (COFASP) composed of technical and legal men representing 13 producers of polyethylene resin drafted the broad-gauge petition covering all types of polyethylene resin except copolymers, with wide parameters to accommodate the changes that occur in the resin during film manufacture.

The copolymers of polyethylene are covered in a separate petition submitted by the Phillips Chemical Co. and officially filed with F&DA on March 17 and should have resulted in action by Sept. 12. However, F&DA has requested material samples, thus postponing a decision.

The COFASP petition was not filed until Aug. 24 and the 180-day evaluation period was held up pending submission of samples by industry, but F&DA hopes to have a final decision on this by the year's end.

The other packaging materials now under petition will also be relatively immune from immediate retesting, but F&DA officials emphasize that any type of clearance is based only on present knowledge and manufacturing techniques. They advise all suppliers to perform extraction studies after every change in formulation. ●

CORRECTIONS: Identification of Standard Plastics, Inc., Fogelsville, Pa., as supplier was inadvertently omitted from the caption on the drawing of a special polyurethane suspension package on p. 103 in the article "Foamed Plastics on the Rise," MODERN PACKAGING, Oct., 1960. Also, the foam material used in the spiral-wound container pictured in the same article (p. 98) is a 10-mil foamed-polystyrene sheet made by the Dyna-Foam Corp., Ellenville, N.Y. Since the article appeared, techniques have been announced for embossing, thermoforming and laminating this ultra-thin foam sheet to paperboard. ●

Standard's marketing approach to packaging pays off... in many unusual ways



How to make the FDA happy

"Chicken and glue don't mix," says the FDA. And they're very opinionated about it. That's why Standard's *Bradley-Gilbert Division* made the first chicken parts box that has all the glue permanently confined to the *outside*. In addition, the box has a unique snap-lock that locks fast at just a touch. Has double-strength ends that won't buckle under heaviest stacking conditions. And it's easier and faster to fill. The cost? No more than Swift's (and others) paid for old-style boxes.



Ingenuity solves drippy problem

The theory that customers have a right to "Buy their cake and eat it, too" led Goodman American of Chicago to consult Standard about packaging its ice cream and cake sandwich. The drip problem was tidily solved by enclosing the sandwich in a heavy foil wrapper, using the same principle applied in making milk bottle hoods. Once opened, the pack becomes a "bowl". Consumer may use spoon, or eat by hand, peeling package away as he progresses.



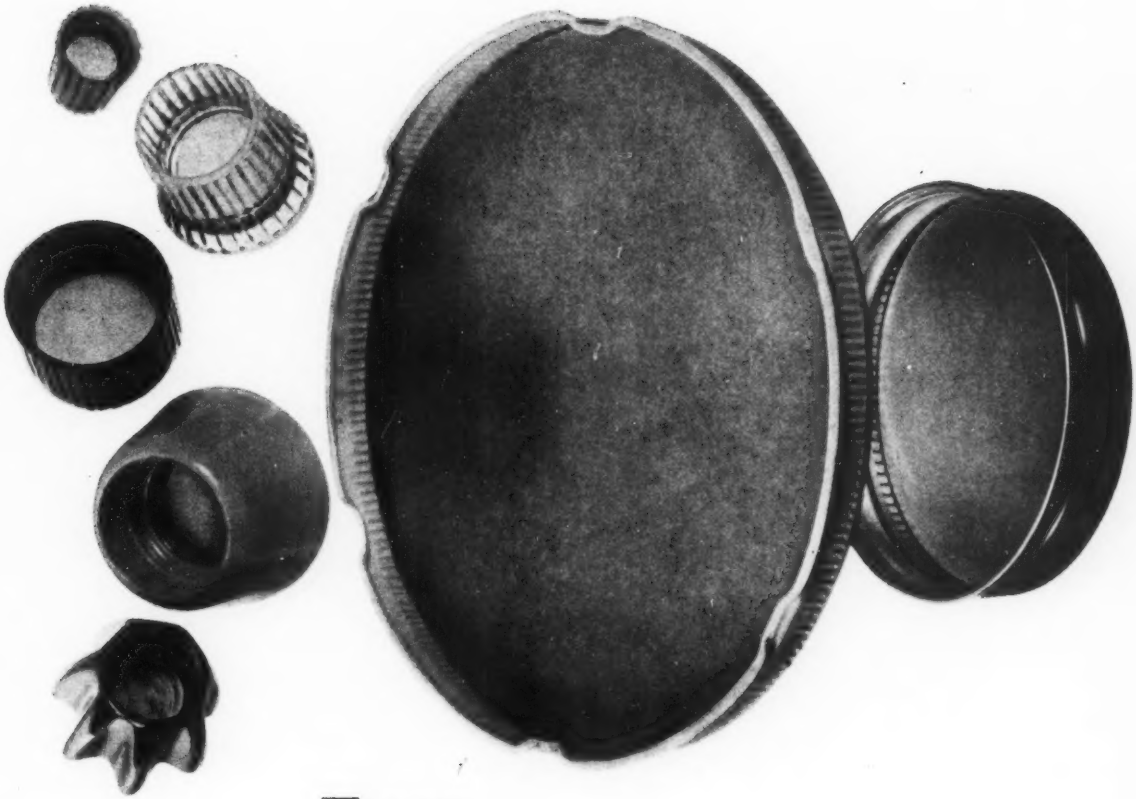
Vacuum-packaging switches food sales from cool to hot

The XLNT Spanish Foods Company wanted to build a fire under its enchiladas business. Standard's *Flexible Packaging Division* recommended they switch from cello over-wrap to vacuum-packaging, using Standard's 6-12 Flex-Vac machine. Result? Consumer sales are up 30 percent. Furthermore, the store-life of XLNT Enchiladas has nearly tripled. Formerly 8 days, it's now 3 weeks! And nothing's been changed but the package.

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"Goods returned because of leakage." This complaint from consumers and dealers once cost the food, drug, cosmetic, toiletry, and liquor industries millions of dollars a year. Now, that loss has been all but eliminated. And Standard Packaging played a major role, by creating cap liners that are airtight, leakproof, and impervious to oil, alcohol, acids and other chemicals. That's why practically *every* closure liner used in America today is made by Standard Packaging. And when better liners are made, they'll very likely be the result of Standard's research. Is there any phase of *your* packaging that might be improved – by new thinking or new materials? Perhaps Standard can be of help.

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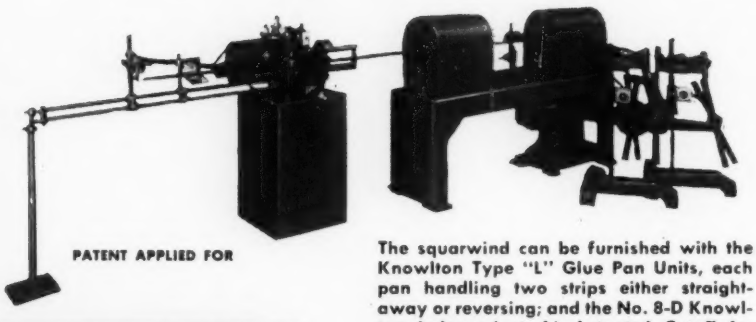
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NEW KNOWLTON SQUARWIND

Versatile Square Spiral Tube Winder



PATENT APPLIED FOR

The squarwind can be furnished with the Knowlton Type "L" Glue Pan Units, each pan handling two strips either straight-away or reversing; and the No. 8-D Knowlton Independent Air-Actuated Cutoff for cutting to stick lengths as the tube is produced on the Winder.

The new Knowlton Squarwind produces square or rectangular spiral wound tubes continuously and is available in two models. Model No. 1 has a range from 3/8" to 1" square; Model No. 2 range is from 1" to 2" square. Square, rectangular and various irregular shaped mandrels can be furnished.

Squarwind will produce tubes with sharp inside corners. It will handle materials other than paper that have the proper flexibility and forming characteristics. From two to seven ply can be handled on the Squarwind.

Production on Model No. 1 is from 15 to 20 lineal ft. per minute; Model No. 2 gives 20 to 25 lineal ft. per minute.

Squarwind winding mandrels are made to exacting Knowlton specifications for each type and size tube required.

M. D. Knowlton Company

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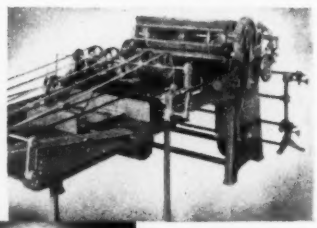
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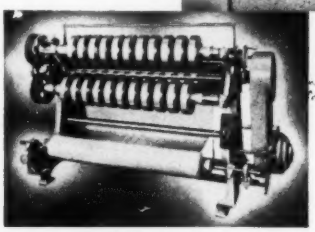
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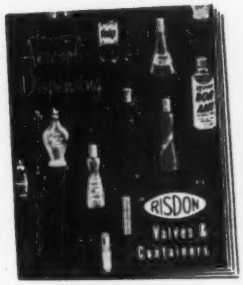
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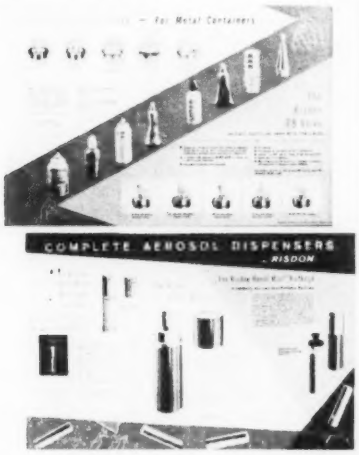
New Booklet On AEROSOL DISPENSING



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THE RISDON MANUFACTURING CO.
AEROSOL DIVISION
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RI-116

Gas for food aerosols

Food packagers may soon be able to use a liquefied gas propellant for their aerosol products, if F&DA takes speedy action on a petition for clearance of Freon-C-318, which was submitted by Du Pont and formally filed by the Federal agency on August 6 in the *Federal Register*.

The new gas, chemically known as octafluorocyclobutane, is odorless and tasteless and is said to have the chemical stability needed for use with foods.

Approval of this liquefied gas is expected to open up broad fields of application for food aerosols, which are presently limited to products that can be successfully dispensed with such compressed gasses as nitrogen and nitrous oxide. While these latter propellants are ideal for products that must be dispensed in a solid stream or spray, the new liquefied gas will enable more efficient aerosol packaging of foods dispensed in foam form, such as dressings, spreads and even butter and cheese. ●

PFCA is formed

Plastic Food Container Assn., new addition to the ranks of formal packaging trade groups, has been organized in Chicago with these principal objectives:

(1) An ambitious public-relations and research program.

(2) Stabilization of plastic food-container standards.

(3) Governmental contracts on behalf of member manufacturers.

The public-relations program, intended to build a favorable image for plastic food containers, will get going as soon as funds permit. With 16 members already signed and at least a half-dozen more imminent, PFCA hopes that launching of this phase of the public-relations program is not far off.

Establishment of standards for plastic-container sizes, weights, performance and general quality is also high on the priority list. PFCA believes that establishment of quality standards should do much to help these relatively new containers reach full potential.

PFCA is managed by Smith, Bucklin & Associates, 333 N. Michigan Ave., Chicago 11. William W. Carpenter is executive director. ●

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Convenience is king

[*Continued from page 99*]

packages that are easier to fold back over unused portions once the wrap has been cut open. If you want to find out some of the annoyances still to be overcome in this area, just bring up the subject of packaging at any informal gathering of housewives.

6. *Convenience of simple directions.* Essentials of convenience that should never be overlooked are the printed directions. It is axiomatic to say that they must be simple and easy to understand, presented in type large enough to be clearly legible. Today's packagers definitely appear to be placing more emphasis on these details, according to package-design consultants, who notice requests for more concentrated effort on graphic treatment of informative copy. The simplest instructions must also describe how to use a package. The most efficient package is self-defeating if its convenience features are so complicated that the housewife prefers knife slitting to the bother of studying the printed directions.

7. *Convenience in use.* If a product is to be used all at one time, then nothing more than easy opening and easy emptying is required. A baking mix containing just the right quantity for one batch is a typical example. But if the product has to be measured out in small quantities, the package must be designed to make the dispensing easier. For this reason, there seems to be a marked trend toward the adoption of more packages equipped with their own measuring caps, pour spouts, brush and sponge applicators, shaker tops, roll-ons and other devices, as well as squeeze bottles and aerosol sprays. A new version of the roll-on is what the Mennen Co. is calling a contoured roller—curved to the contour of the body to make the package easier to use. It is presently being market tested for two new liquid deodorants, Orbit and Brake.

The essential to remember in the case of every dispensing device, however, is: "Will it work?" Millions of dollars have been spent on trick dispensers that never get off the ground. It's better to spend on research first to be sure a device offers true consumer convenience and is not just an irritating gadget.

8. *Convenience of handling.* The increasing number of glass and plastic bottles with "wasp waists" indicates that packagers are keenly aware of consumer preference for packages with a safe grip. The new shapes also show that more attention is being paid to designs that provide sturdy bases that don't tip easily. If packages are large and heavy, carrying handles and bails are being provided more frequently. An interesting example is a convenient plastic carrying handle that Lever Bros. has added to its large greaseproof-paper-lined cartons for automatic-washer-sized packages of All detergent.

9. *Convenience of storage.* Packagers had better watch out too for the tall containers designed to create better shelf impressions. Consumers don't like them if they are inconvenient to fit on home cupboard shelves and in refrigerators. They like the convenience of storing things in the original package without transfer to another container in the home. Careful consideration, therefore, should be given to every package with respect to the way it is used in the home, as well as its appearance on the store shelf.

10. *Convenience of disposability.* Packages that are easy to get rid of when empty are appreciated by consumers. Undoubtedly a reason for wide acceptance of paper packaging has been the convenience with which it can be incinerated or thrown away; this is a big consideration for apartment dwellers. Among the most important convenience developments of recent years is the no-deposit bottle or can which does away with the nuisance of returns. And disposability is becoming one of the major reasons for the acceptance of today's low-cost plastics packaging.

11. *Convenience of heat-and-eat.* Almost 30% of the evening meals in American homes are prepared in less than half an hour, according to the Market Research Corp. of America, which points out—in connection with the frequency of purchase of all-out convenience items like TV dinners—that an item's appeal to employed housewives today depends not just on convenience, but on the *degree* of convenience. On the basis of this observation, no food processor can afford to ignore the still vast potentials for prepared frozen-food items that can go right into the oven in their foil pan, or the frozen prepared entrees in plastic pouches that can be popped into a pot of boiling water, ready for serving in minutes with no pans to wash. From a practical economic standpoint, however, each packager must evaluate the money-making potentials of every-day convenience like instant potatoes that consumers will buy year-in, year-out as distinguished from what is called "emergency packaged convenience" like complete frozen dinners, or "specialty and gourmet convenience" like chow mein, pizzas, frozen lobster Newburg, etc. Not to be overlooked, either, is the convenience of foil baking pans included with many of the baking mixes, some of them—as in the case of one brownie mix on the market—now actually serving as the exterior shelf package for the product.

12. *Convenience of "table-ready" packages.* An important aspect of convenience is the package with a non-commercial look[3] that can go right to the family table. A new example is Borden's line of throw-away, high-impact-polystyrene containers for cottage cheese in attractive colors.[4] The only identification is on the removable plastic lids. When 450 housewives were interviewed to determine probable acceptance of the containers, 55% said they would serve conventional paper containers at the family table, but the figure jumped to 79% with the new plastic container.

Many versions of table-ready containers have recently appeared on the market: the handy salt-shaker packages with no trade identification once the outer transparent wrap has been removed; the handsomely shaped glass container for Sucaryl dietitic sweetener; the attractive jars for jams, jellies, mustard and other condiments. Butter-Nut Foods Co. of Omaha has introduced a carafe-shaped jar for instant coffee,[5] so attractive it could start a whole trend in table-ready containers for instant coffee—a packaging idea women are always asking for in "Why-Don't-They" columns.

Possibilities in quite another product field are suggested by a new

[3]See "The Non-Commercial Look," MODERN PACKAGING, Nov., 1957, p. 111.
[4]See "Economy In a Plastic Cup," MODERN PACKAGING, Aug., 1960, p. 94.
[5]See "Instant Coffee 'Carafe' Projects Subtle Quality Appeal," MODERN PACKAGING, Oct., 1960, p. 111.

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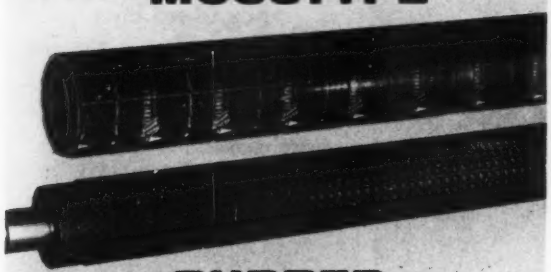
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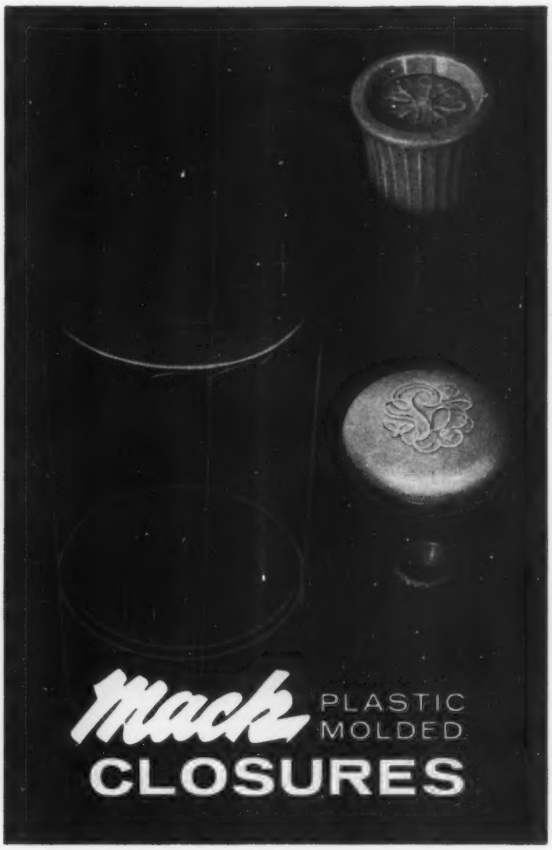
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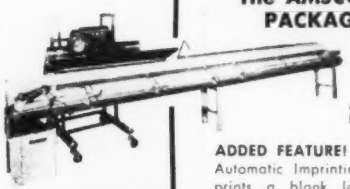


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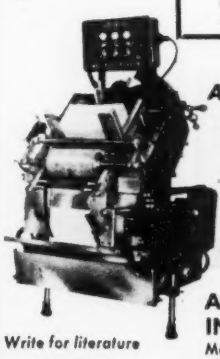
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foil-laminated tray printed to look like an attractive bread basket for Awrey's Bakeries (Detroit) Italiana bread, sliced and ready to warm up in a package that can go right to the table.

Finally, an interesting facet of the philosophy of convenience is the premium price that consumers apparently are willing to pay for products in packages that are easier to use, or that cut their housekeeping time. A recent study by *Food Field Reporter* concluded that the price for convenience items is on the average 51.2% higher than for the same or similar items in packages without convenience features.

Based on recent prices in New York markets, whipped cream in pressure-packed pushbotton containers costs 11 cents an ounce, whereas heavy cream in a carton may be bought for about 4 cents an ounce. Flour in handy shaker cans costs twice as much as flour in a 5-lb. bag. Salt in multipacks of miniature table shakers costs at least four times as much as salt in 26-oz. canisters. But all of these convenience packages are successful.

The total annual consumer expenditure for the products covered in the study was estimated to be around $2.7 billion. "If all these products were purchased in the convenience form at current prices," the report states, "the expenditure would have been about $4 billion. The 51.2% greater price paid for convenience would have resulted in a $1.3 billion greater expenditure."

No doubt about it: there is definitely profitable business today in the package that is upgraded to offer a superior degree of convenience that has real value. ●

CORRECTION: Properly identified here are the photographs of two readers who replied to last month's Sounding Board question (Oct., pp. 73-74). Mr. A. H. Cummings is president of College



Cummings



Bloom

Inn Food Products Corp., Chicago; Dr. Jack Bloom is director of research and development of the Continental Coffee Co., also Chicago. ●

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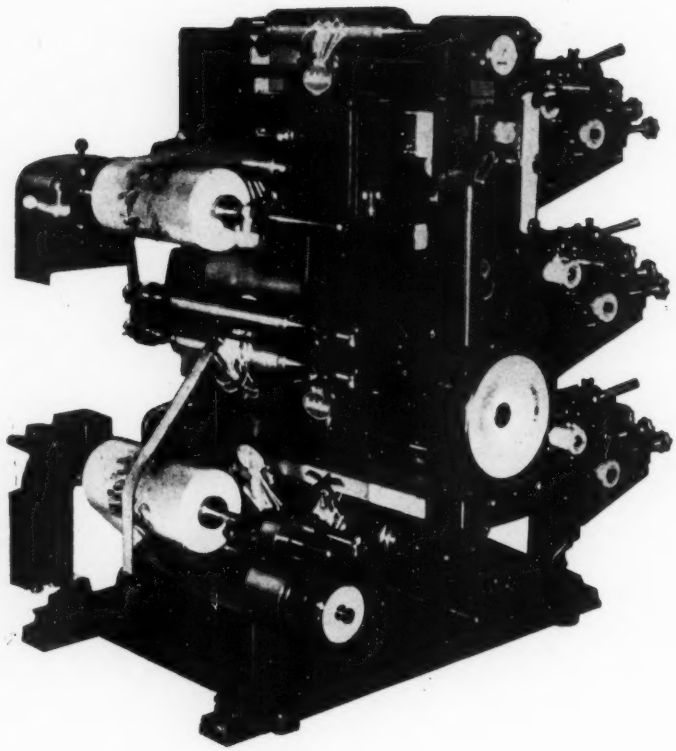
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Manufacturers' Literature

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EQUIPMENT • SUPPLIES • SERVICES

TABLET PACKAGING EQUIPMENT. 4-page reprint describes high speed tablet packing machine which fills 100 count bottles at the rate of 300 a minute. Semi-automatic models, conveyors, elevators, tablet inspectors, bottle cottoning machine also described. Lakso Co., Inc. (K-050)

BAG MAKER AND FILLER. Data sheet describes twin-tube bag maker and filler with speed of 120 bags per min. Tubes operate by common drive, but single tube operation is possible to permit film change or routine maintenance. Triangle Package Machinery Co. (K-051)

UNIT PACKAGERS. 3 brochures describe continuous-motion horizontal unit packager used where one size package is to be run at variable speeds; also, packager where package size changes are a necessity; and combination conveyor and magazine feed unit packager. Wrap-Ade Machine Co., Inc. (K-052)

BLOW MOLDING MACHINE. 4-page brochure describes dual-manifold blow molder for production of hollow plastic products, including carboys and chemical containers, gasoline tanks and cans, insecticide tanks, etc. F. J. Stokes Corp., Packaging Equip. Div. (K-053)

LABEL PASTERS. 2-page bulletin on hand or motor driven, 6" or 8" models for labeling, wrapping and packaging bottles, cartons, cans, boxes. Designed for wines, food products, hosiery, etc. Potdevin Machine Co. (K-054)

CASING TYER. 4-page brochure describes casing tyer for sausages which ties 1,000 or more per hour. Handles casings 1¼" to 5" Cellulose, #2 to #10 Fibrous, from C to R Zephyr. Tipper Tie, Inc. (K-055)

FILMS. 8-page fold-out gives technical properties of 8 of this company's films for packaging. Films are compared for characteristics, barrier properties, advantages. E. I. duPont de Nemours & Co. (K-056)

SLITTING & REWINDING MACHINE. 8-page booklet describes 14 models of slitting and rewinding machines for cellophane, acetate, polyethylene, PVC film, waxed papers, etc. Erwin Kampf Maschinenfabrik. (K-057)

PAPER SHREDDERS. 4-page booklet describes line of shredders for daily disposal of heavy cartons, boxboard and newspapers. Seven models described. Industrial Shredder & Cutter Co. (K-058)

CORRUGATED BOXES. 8-page brochure explains in detail twelve tests conducted on corrugated board and shipping containers to assure uniform high-quality. Gaylord Container Corp., Div. Crown Zellerbach Corp. (K-059)

FOOD ADDITIVES AMENDMENT. 14-page discussion of the Food Additives Amendment of 1958, covering the status of printing inks as additives, limitations in use of printing inks and other packaging materials, violations of the law, problem of guaranty, and other topics. Claremont Pigment Dispersion Corp. (K-060)

VIBRATORY FEEDER. 2-page brochure describes and illustrates feeder with 18 ton capacity per hour. Designed for packaging operations, the feeder is dust, moisture, and splash proof. Syntron Co. (K-061)

PACKAGE FILLING MACHINE. 4-page brochure describes semi-automatic vibratory package filling machine with speeds up to 60 per minute. Fills all bags or containers, any dry, semi-dry, free flowing or slow flowing products, from fine powders to pieces the size of walnuts in the shell. Stuyvesant Engineering Co. (K-062)

POLYESTER FILM. 6-page brochure describes transparent film for laminating bases, printed webs, shrink wrapping and substrates for extrusion. Physical and dielectric properties, prices. Acme Backing Corp. (K-063)

PACKAGE CUSHIONING, 14-page booklet furnishes basic facts on package cushioning, including cause, prevention of damage, selection and properties of cushioning materials, applications, design procedure, and many other topics. B. F. Goodrich. (K-064)

PACKAGING MACHINERY. 8-page brochure describes machine that forms, fills, seals 60 to 400 pouches per minute, handling liquids, pastes, powders, viscous materials, and granular solids. Cartoning unit to carton the pouches also described. Bartelt Engineering Co., Inc. (K-065)

ALUMINUM FOIL CONTAINERS. 8-page brochure includes information on the use of rigid aluminum foil containers for convenience packaging. Availability of various types of container edges or flanges, closure styles and manual or continuous feed closure machines is described. Anaconda Aluminum Co. (K-066)

ENGRAVING MACHINES. A series of brochures on two-dimensional engraving machines and attachments, engravers for steel and other metals, hand engravers and accessories such as cutter grinder, electro-markers, work holding devices and master index fixtures. Specifications. H. P. Preis Engraving Machine Co. (K-067)

TICKETING-LABELING MACHINE. An illustrated catalog sheet describes features and applications of a machine designed to affix labels or tickets to sealed polyethylene packages. Operational procedures and specifications. Amsco Packaging Machinery, Inc. (K-068)

MODERN BOLD TYPO. 4-page illustrated specimen folder describes features and uses of typography for advertising, packaging, etc. American Type Founders Co., Inc. (K-069)

INDUSTRIAL GLUES, POLYMERS, RESINS, ADHESIVES, COATINGS. 36-page illustrated catalog lists miscellaneous industrial and consumer products such as glues, adhesives, chemicals, monomers, polymers, resins, coating materials, etc. Lists specifications, end-uses technical data. The Borden Chemical Co. (K-070)

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EQUIPMENT • SUPPLIES • SERVICES

FILLING AND STOPPERING MACHINES. 12-page catalog describes features of machinery and equipment designed for automatic powder and/or liquid filling and stoppering of glass containers or vials. Specifications. Perry Industries, Inc. (K-071)

TABLE-TYPE FOLDING MACHINES. 4-page illustrated catalog describes features and applications of 3 models of table-type folding machines designed for printing plants and duplicator operations. Handles single, double parallel folds on sheets up to 17 x 22 inches. The Challenge Machinery Co. (K-072)

AEROSOLS, OTHER PRESSURE PACKAGES. 20-page catalog brochure traces aerosol history, growth, markets, products, container availability, industry services. Specifications. Continental Can Co. (K-073)

PLASTIC PACKAGING. 18-page illustrated brochure describes features and applications of a skin-tight, flexible, transparent packaging wrap. The Cryovac Co., Div. W. R. Grace & Co. (K-074)

INDUSTRIAL FIBRE BOARD. 12-page illustrated brochure describes features and uses of an industrial fibre board designed for protective packaging. The Celotex Corp. (K-075)

PACKAGING EQUIPMENT. Illustrated 6-page brochure describes a machine that forms, weighs and fills and seals bags of polyethylene, cellophane, etc., and can be provided with special scales, fillers, feeders, table feed conveyors, liquid fillers, counters, etc. Mercury Heat-Sealing Equipment Co. (K-076)

PROTECTIVE PAPER AND PADS. 16-page illustrated catalog describes features and applications of molded indented protective paper and pads for use in packaging. Available in sheets or rolls. Samples. Kieffer Paper Mills. (K-077)

CARTONING MACHINERY. 4-page illustrated folder describes features and applications of automatic cartoning machinery, suited for packaging such items as baked goods, surgical dressings, machine parts, bottles, jars, cans, tubes, etc. Container Equipment Corp. (K-078)

FILLING EQUIPMENT. 8-page illustrated folder describes features and uses of automatic and semi-automatic filling machines. Suited to powders, pastes, and granular products. Specifications and data. Food Machinery & Chemical Corp., Packaging Machinery Div. (K-079)

CONVEYOR-LINE MARKER. 8-page illustrated catalog folder describes features and uses of various types of conveyor-line marking equipment. Specifications and data. Wm. A. Force & Co., Inc. (K-080)

STOCK LABEL LINE. 8-page illustrated catalog folder provides information on a line of miscellaneous labels for mailing and shipping. Specifications and prices. Ever Ready Label Corp. (K-081)

PRECISION WEIGHING MACHINES. 2-page illustrated bulletin describes features and applications of equipment designed for industrial weighing operations of all types. Specifications and data. The Exact Weight Scale Co. (K-082)

SLITTING-REWINDING MACHINE. 4-page illustrated catalog folder describes features of a slitter-rewinder designed for use with film, foil, tape, and paper. Specifications and data. John Dusenbery Co., Inc. (K-083)

MEAT, CHEESE WRAPPING MACHINES. 4 illustrated catalog sheets describe series of wrapping machines for sliced luncheon meats, cold cuts, trayed frankfurters, many shapes of cheese products. Uses transparent flexible packaging wraps. Crompton & Knowles Packaging Corp. (K-084)

GRAVURE COLOR GUIDES. Data sheet and sample book of gravure color guides designed for use in packaging. Switzer Bros., Inc. (K-085)

PLASTIC BAG MACHINERY. 4-page illustrated brochure describes integrated machinery for making plastic bags, printing, etc. F. J. Stokes Corp. (K-086)

ADJUSTABLE PRESSURE CONVEYOR. 4-page illustrated bulletin describes features and applications of a roller adjustable pressure conveyor. Specifications and data. The Rapids-Standard Co., Inc. (K-087)

CUSTOM-DESIGNED PACKAGING SPECIALTIES. 8-page illustrated booklet gives detailed information on custom-designed and standard packaging and promotional specialties made in transparent and opaque plastic. Plastic Artisans, Inc. (K-088)

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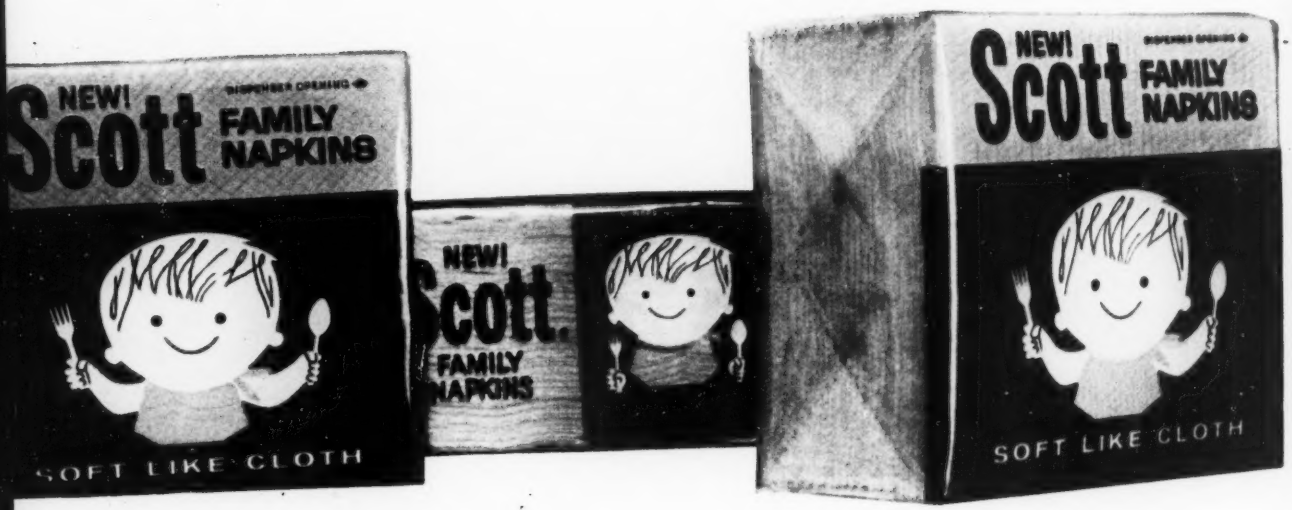
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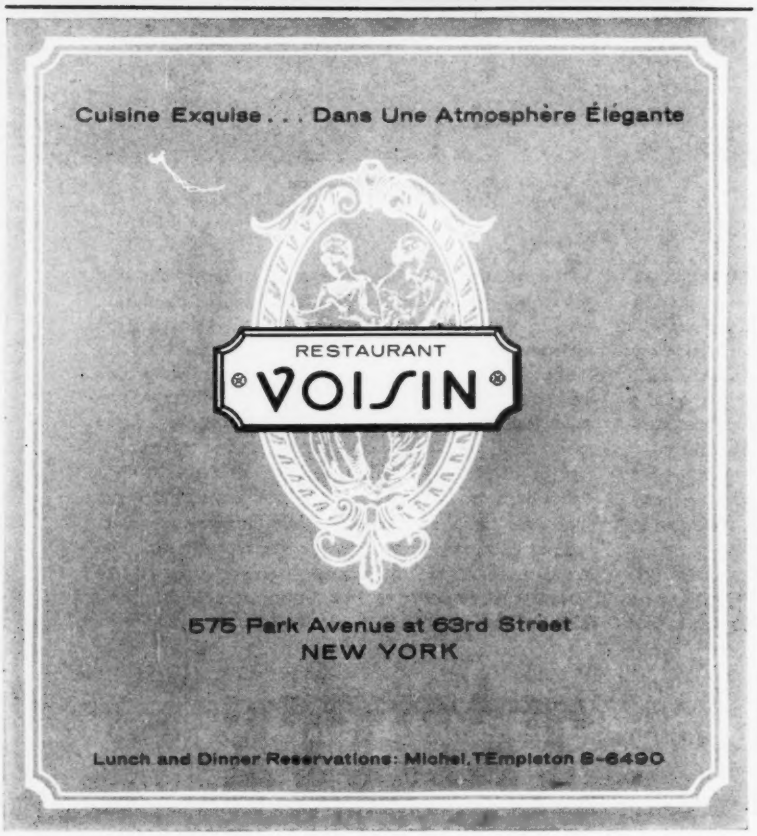
A good film to consider is that extruded from medium-density Tenite Polyethylene. Such film is clear, glossy and invitingly soft. This last property is particularly advantageous where you would like to have your product's basic softness fully conveyed to a prospective customer. (Bread and textile items, for example, have scored outstanding sales successes when wrapped in film of Tenite Polyethylene.)

While the film is soft to the touch, it possesses just the right degree of stiffness and slip for efficient use on high-speed packaging machines, where its wide heat tolerance also simplifies heat-sealing operations and minimizes waste. Its resistance to puncture and tearing is excellent, and this toughness helps protect the wrapped merchandise against damage and soiling during handling by shoppers. Other useful properties include high resistance to moisture-vapor transmission and the ability to take and hold whatever printed decoration you wish to apply over your package.

Film of Tenite Polyethylene is available from leading extruders across the nation. Look into its many advantages as a protective and sales-building wrapper, bag or pouch for your products. For more information on its over-all packaging usefulness, write EASTMAN CHEMICAL PRODUCTS, INC., subsidiary of Eastman Kodak Company, KINGSPORT, TENNESSEE.

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Co-polymer film bags

[*Continued from page 135*]

seals can be made consistently and on a routine basis in a commercial operation has been clearly proved in our field-evaluation results. In a typical commercial bagging operation (see Figures 3 and 4), it has been demonstrated that 10 TR-101 bags can be filled with 50 lbs. of ammonium nitrate and sealed every 60 seconds. In this case, the filling equipment rather than the standard commercial band-type sealer (set at 350 deg. F.) was the limiting factor. The sealer itself is easily capable of running at least 20 top seals per minute on TR-101 bags and changes are being made in the filling equipment to utilize that sealing rate. The same sealer is capable of putting bottom seals on empty bags made of TR-101 film at a production rate of up to 40 bags per minute.

In addition to heat sealing, several other methods of closing TR-101 bags should be considered. For example, bags may be sealed using a plastic-backed pressure-sensitive tape. In this case, however, the areas to be taped should be relatively clean. The tapes can be applied by hand if the number of bags to be sealed is low. If the number is large, special taping machines are available. Pipe-wrap tapes, which are relatively cheaper than ordinary plastic-backed pressure-sensitive tapes, may be successfully used in this application. The only requirement is that the tape should be at least 1½ in. wide for good adhesion and good strength.

Smaller bags or pouches destined for retail markets might also be closed with various types of ties containing an internal wire, or with narrow tape wound around the bunched neck. Valve closures could undoubtedly be developed for these and larger bags, although we do not know of a suitable valve at this time.

Applications

Products which might advantageously be packaged in TR-101 bags include those which are very hygroscopic and/or corrosive in nature, or where the moisture content of the product must be regulated. Among these products are boric acid, calcium chloride, caustic soda, detergents, diatomaceous earth, dried milk, dog food, dyes, specialty

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flours, food additives, insecticides, peat moss, plastic resins, processed potatoes, seeds, silica gel, smokeless powders, sodium silicates and waxes. These and other products utilized more than $2\frac{1}{2}$ billion multiwall bags of various construction in 1958. It is estimated that bags made from TR-101 can fulfill the requirements for about 60 million of the multiwall bags now being used. In addition, 12 to 15 million bags could be used in applications where fibre drums are now employed. Liners for fibre drums could utilize another 3 to 4 million units. Total estimated usage would therefore add up to close to 80 million bags and liners.

TR-101 resin is presently permitted for use as a food-packaging material for non-fatty foods by the Food & Drug Administration by virtue of the extensions listed in the *Federal Register*, March 17, 1960. In addition, bags made from TR-101 have been approved for the packaging of specific fatty foods.

References

1. Anon., "Heavy-Duty Polyethylene Bag," MODERN PACKAGING, May, 1958, p. 198.
2. Anon., "Polyethylene Bags for Fertilizers," *Plastics*, Sept., 1958.
3. Martinovich, R. J., and Boeke, P. J., "Performance of a New Polyethylene," MODERN PACKAGING, Oct., 1957, p. 167.
4. Doyle, Robert, "Extrusion and Forming of High Density Polyethylene Blown Tubing," *Modern Plastics*, May, 1959, p. 137. ●

New roll-fed cigarette cups

[*Continued from page 105*]

The new attachment handles a roll containing 29,000 labels which runs for 3 hrs. and 40 min. without changing. The old method required the manual loading of 500 labels every three or four minutes. When a roll is exhausted, another is ready to be moved into position. Label ends are spliced and the packaging operation is resumed in seconds. The new method completely eliminates the problem of "double feeding" from a stack, thereby reducing waste and reject packages. There is no waste caused by the problem of curling of flat sheets. And there should be a saving of paper, in that slightly lighter-weight stock—60 to 65 lb. instead of 70 lb.—reportedly can be handled efficiently with the roll feed.

Companies other than R. J. Reynolds that now have roll-feed units in operation are Brown & Williamson (for Kools and Viceroys), P. Lorillard (for Old Gold Spin Filters), American Tobacco (for Pall Malls) and Philip Morris (for Parliament soft packs).

The roll feed may, conceivably, bring about a change in the appearance of the traditional soft pack, the machinery manufacturer points out, in that the roll-fed label could be designed for application to cover the foil completely at the top of the package. With pre-cut, stack-fed labels, the foil is exposed at the top of the package, two long sides of the cup being joined at the center by what was formerly the revenue stamp. Since the Government relieved cigarette manufacturers last year of the necessity of applying the excise stamp, all companies have continued the use of a "fake" stamp, with a design of their own choosing, simply as an expedient to hold the top of the package together. With a new "cup" that could be folded and sealed over the top—just as it now is at the bottom—the blue strip seal could be eliminated.

The idea of roll-fed labels on cigarette soft packs is not new, but its development was delayed during the '50s when the hard-box package took off so rapidly that there was an impression it might entirely replace the soft pack.

No problems, apparently, have been encountered in synchronizing the roll feed with the high-speed wrapping mechanisms on the standard machine, the indexed blanks being severed by the cutting device at exact speeds required for the wrap-around cupping operation, which has a standard 130-pack-a-minute rate.

With continued demand for the soft pack in almost all brands, there nevertheless appears to be a resurgence of interest in improving soft-pack construction and developing equipment to produce it more efficiently and economically. Credit for the first contribution in this direction, therefore, goes to the developer of the pre-printed roll label and the manufacturer of the standard cigarette-packaging machine, who worked in close cooperation to achieve it. ●



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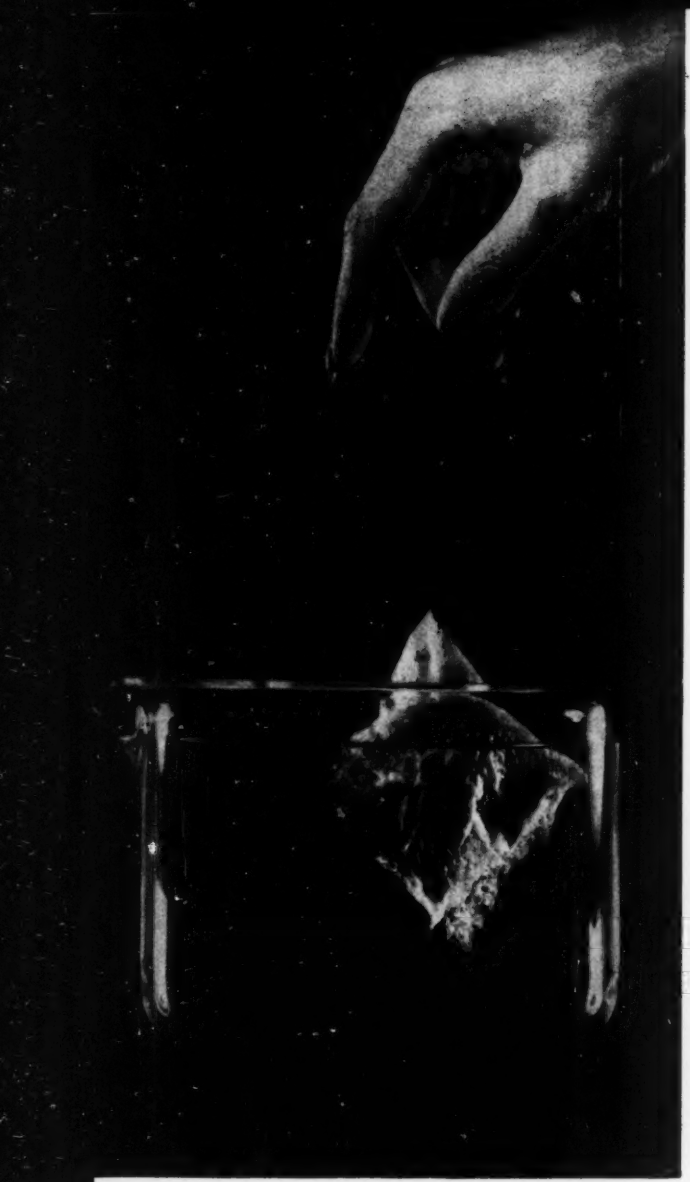
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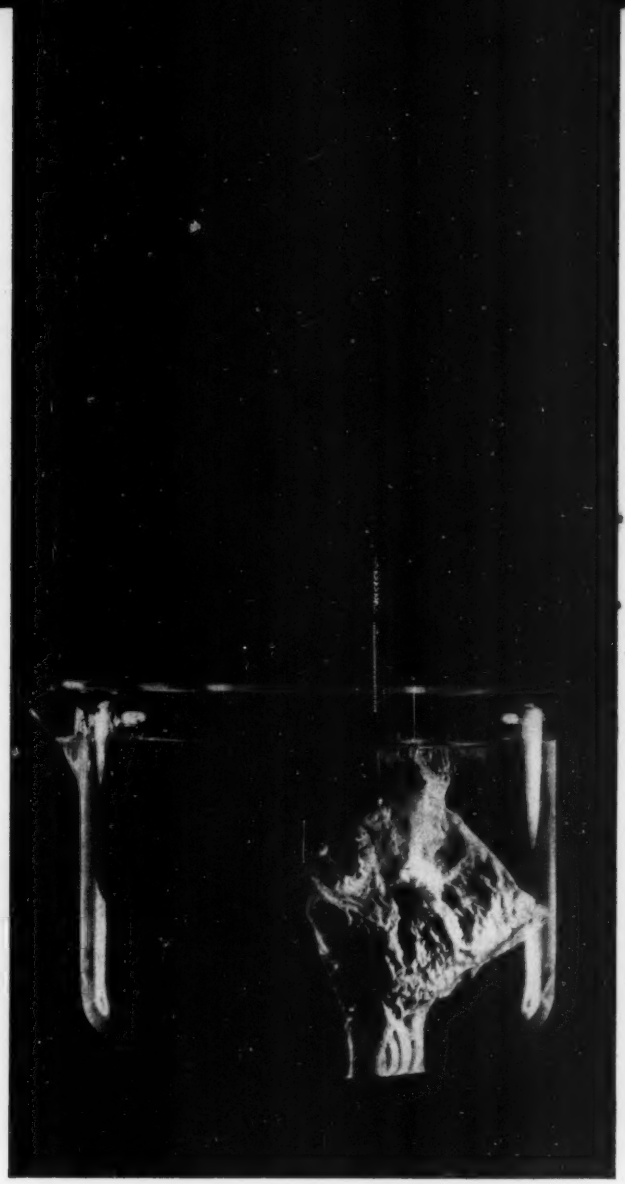
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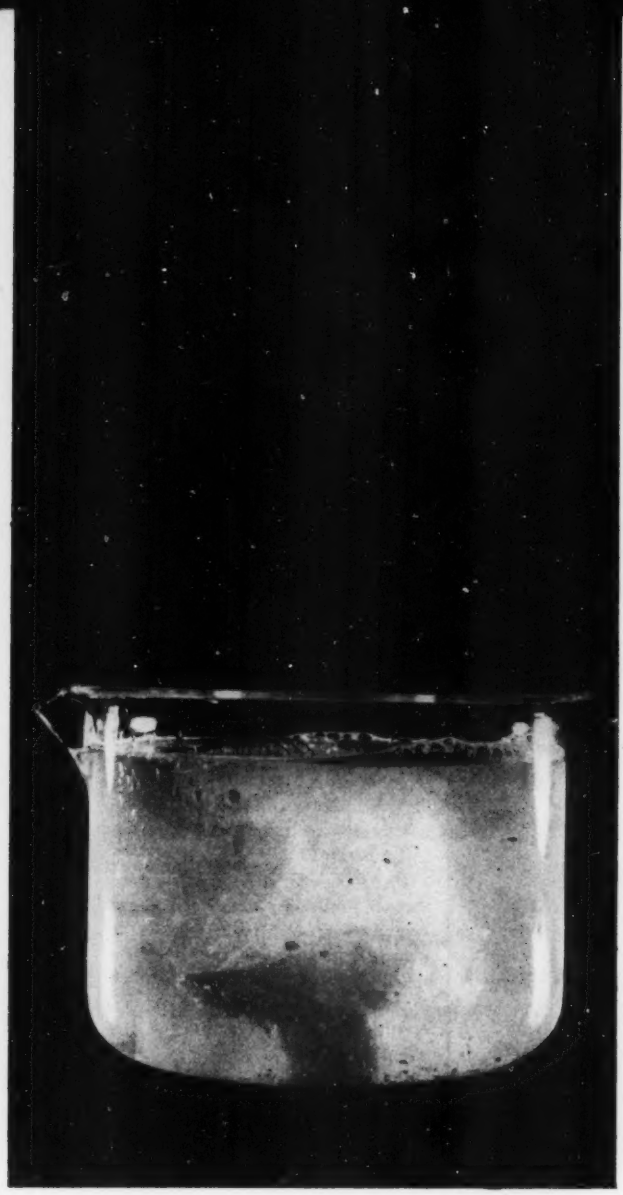
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Carton, plastics forums

Professional members of the Packaging Institute gathered recently—first in Chicago, then in New York—to learn about the latest developments in folding cartons and plastics films, coatings and laminations. And though the two, specialized seminars were widely separated in both place and subject, it was quickly apparent that packagers at both sessions were primarily interested in the same thing—the trend to single-wall cartons for food products.

In Chicago, where more than 100 packagers gathered on Sept. 14 to hear a 17-man panel discuss presubmitted questions, the point was made that much work is needed on better carton designs to improve the efficiency of single-wall cartons for application with very sensitive foods, since these containers are still not so effective as the standard carton-plus-overwrap package. It was also noted that gastightness is not possible at this time with single-wall cartons, though liquid-proof containers are currently being successfully marketed.

On cost, the new plastic-coated cartons run higher than stock waxed containers, though reductions in the prices of plastics and more effective applications of thin plastic coatings may bring prices in line soon, according to the consensus of the panel members.

To fasten the new plastic-coated cartons, hot-melt adhesives are coming back into vogue, according to another commentator. Because of their reliable performance, these resin glues are being used despite their higher cost and are applied with a variety of such new techniques as extrusion and intaglio.

In New York on Sept. 28, about 90 packagers listened to comments by a panel of 16 packaging experts on the trends and developments in plastics and adhesives. Fully half of the questions before this panel also concerned extrusion-coating techniques for single-wall cartons.

It was declared that such containers are now making significant penetration in the bakery and frozen-food fields and may soon achieve widespread use as milk cartons. In addition to polyethylene, which has been the workhorse plastic of this coating field, new water dispersions of polyvinylidene chloride

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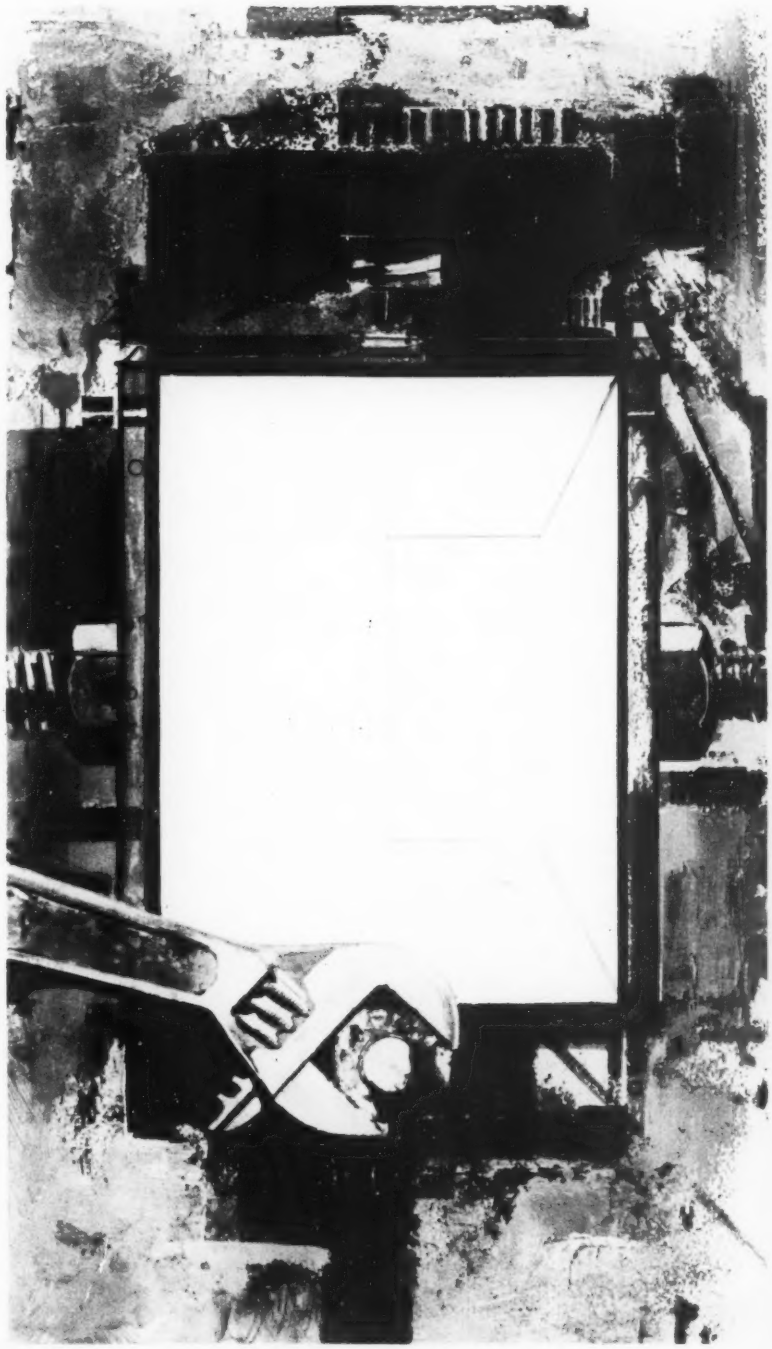


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may also provide significant barrier surfaces in very thin layers. On-machine coating techniques in board manufacturing could result in significantly cutting costs.

In this seminar, the emphasis was on specifications for packaging films and extrusion-coated materials, and the questions submitted by packagers showed a strong interest in methods for obtaining closer tolerances in these basic packaging components. ●

Frozen foods

[*Continued from page 138*]

has any appreciable affect on the palatability scores of frozen and stored ground pork, ground beef, fish and broiler chicken thighs at the concentrations used.

No significant differences in palatability scores attributable to the use of black-pigmented polyethylene film to exclude light were found when comparison was made with similar non-pigmented film (53). Similarly, there were no significant differences in palatability scores attributable to the use of polyethylene film sterilized before packaging under ultraviolet light when comparison was made with similar non-sterilized film (53).

Much more ascorbic acid was retained during storage in frozen snap beans packaged in aluminum foil than in laminated paper bags, but no difference was found with cauliflower (27).

No appreciable change in weight was found to occur during storage of frozen beef, pork and poultry for periods up to about 12 months when properly packaged in a number of different plastic films, aluminum foil and plastic-coated papers (30, 42, 44, 48, 49, 53). In most instances such materials provide adequate protection from desiccation (freezer burn). Even a $\frac{1}{2}$-mil coating of polyethylene on kraft paper was found adequate to prevent any appreciable loss of moisture (49, 53). Therefore, weight records appear to serve no useful purpose in experimental studies where packaging materials of low water-vapor permeability are used.

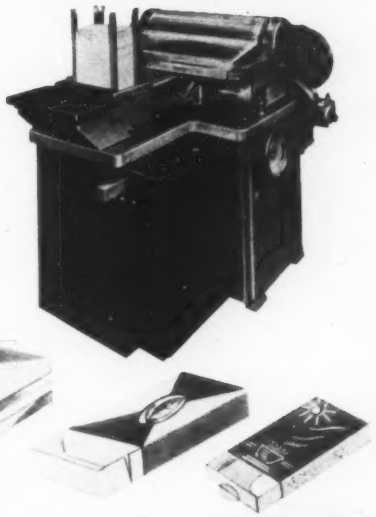
Conclusion

It seems clear that a packaging material for frozen foods should be

[*Continued on page 220*]

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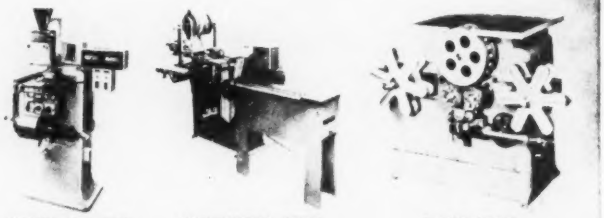
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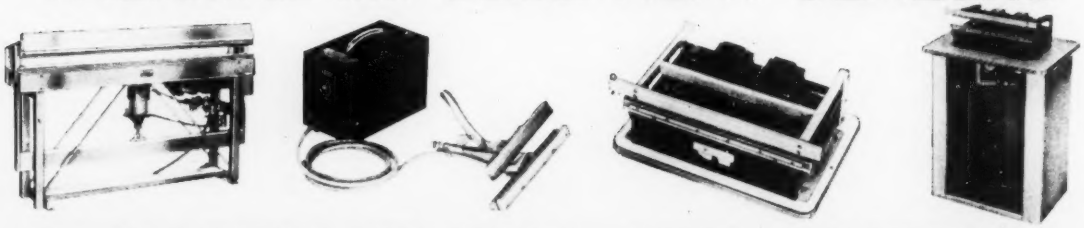
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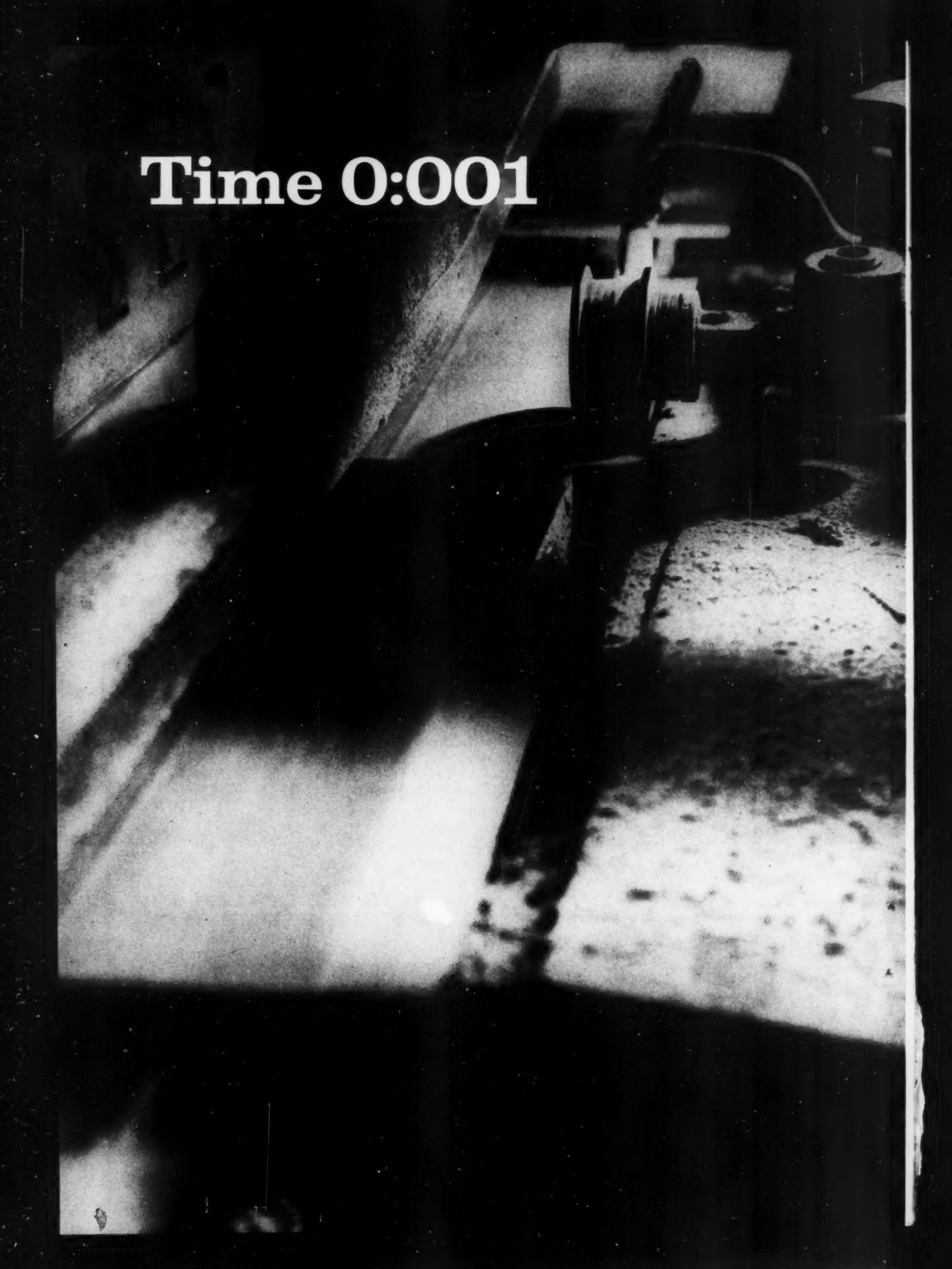
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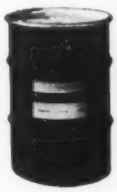
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[*Continued from page 215*]

selected for the degree of protection required by the particular food to be packaged. This will involve not only the kind of food, but also the way in which it is to be processed, the storage temperature and the length of the storage period. There is, at present, no all-purpose material most suitable for packaging all types of frozen foods.

The rapid development of new packaging materials calls for a better understanding of their protective qualities for frozen foods. In addition, these materials must be suitable for use under the Food Additives Amendment of 1958.

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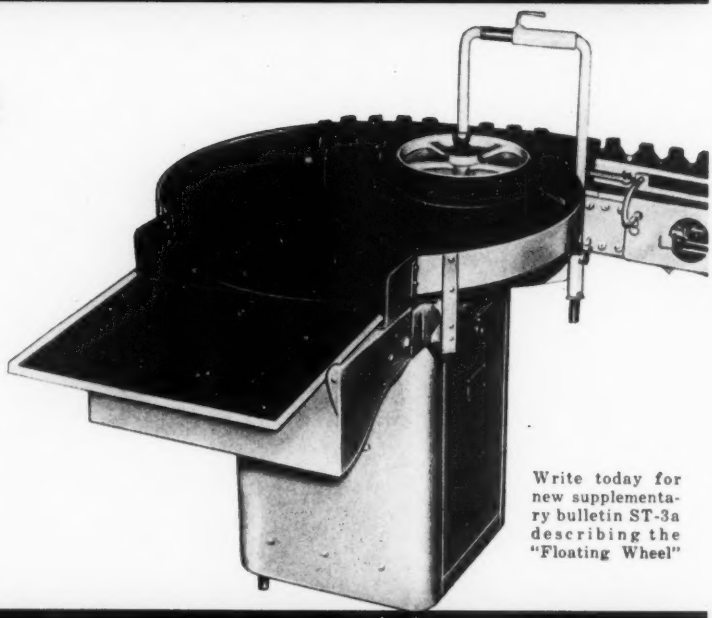
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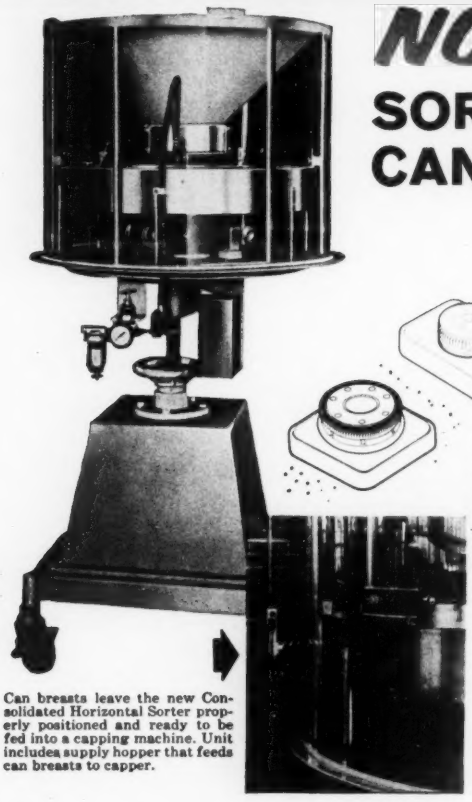
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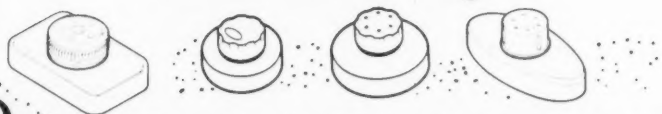
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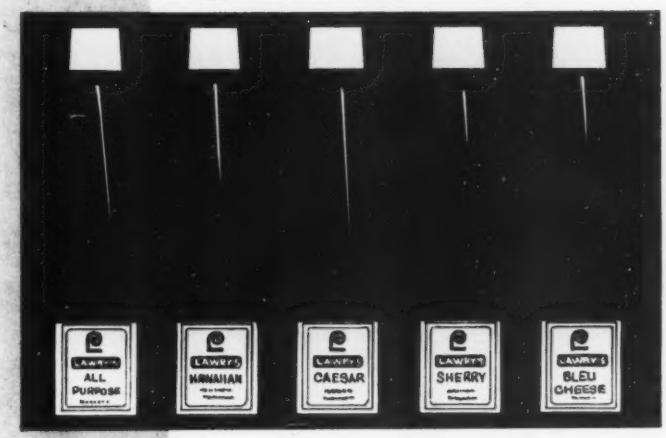
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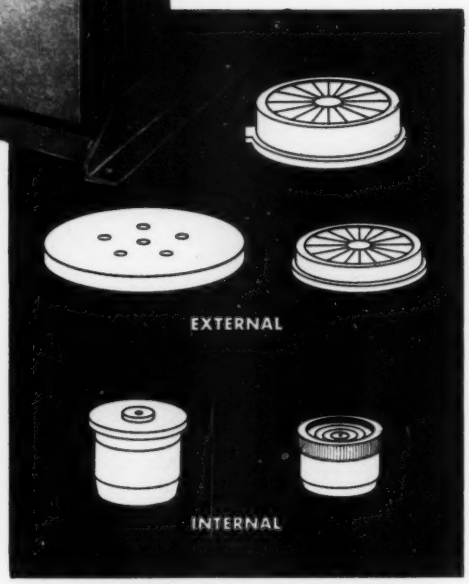
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Hercules Tower, 910 Market Street, Wilmington 99, Delaware

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MODERN PACKAGING

A BRESKIN PUBLICATION

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Attractive enough to earn a place at the family table, this ingenious squeeze bottle package was created for Plochman & Harrison, Chicago and Jersey City, by Continental Can Company, Inc. The lustrous, color-rich "barrel" is blow molded of Spencer "Poly-Eth" Polyethylene resin. The top is injection molded.

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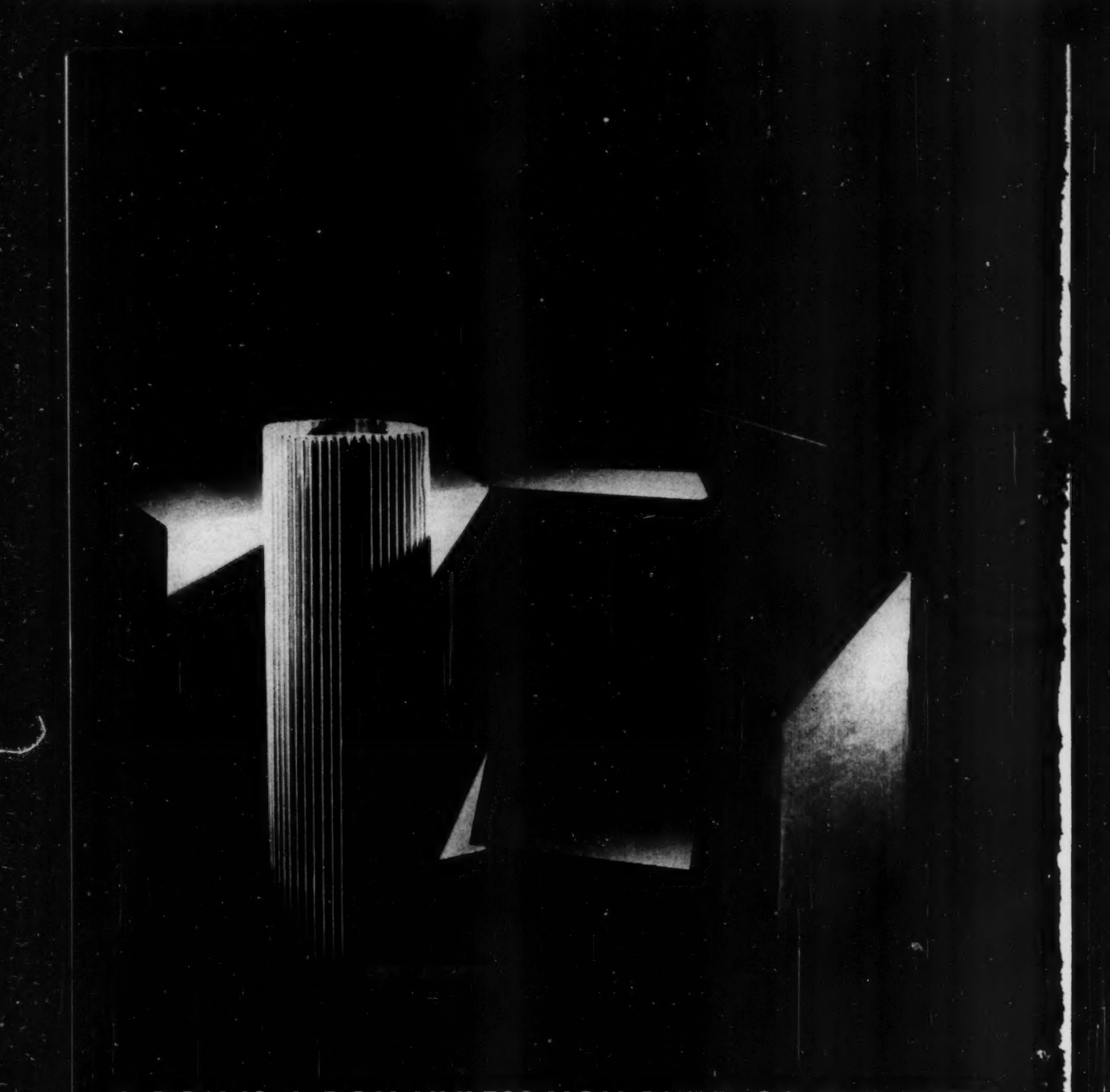
resin number	melt index	density
"POLY-ETH" 4204*	1.4	.919
"POLY-ETH" 5305	2	.920
"POLY-ETH" 5104	1.5	.922
"POLY-ETH" 2405	2	.925
"POLY-ETH" 1504	1	.935
"POLY-ETH" 2905	2	.940

*"Poly-Eth" 4204 is in a class by itself with respect to environmental stress crack resistance. We have been unable to crack it after months of test under ASTM D-1693-59T. Tests are still underway.

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Then it assumes new meaning. If you build them, terms like finger jig, fluffing, splicing on the fly, kiss impression, and dancing roll become meaningful. If you buy them, compression, impact, drum, drop, and tumbling tests are important criteria. But to consumers, a box is a box. Your customers are only aware of the products they buy being intact, and undamaged, and scratch-free. For 39 years Hoerner has been conscientiously designing, and manufacturing corrugated containers for companies who like satisfied customers.



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Battle Creek, Michigan

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but the GAIR people know Bobby very well!

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